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Original Correspondence.

THE REPORT OF THE MINES' INSPECTOR FOR SOUTH STAFFORDSHIRE.

SIR,—The reply of "Another Coal and Ironmaster," published a fortnight after mine, calls for very few remarks. The former letter has been re-printed, and circulated widely by the South Staffordshire Mine Agents' Association, but with no hint that any answer had been given to it. Anyone who has followed the course of the controversy knows that the case of "Regina *v.* Cope" was the origin of the hostility to Mr. Baker. Attempts to induce the Home Secretary to receive a deputation on the subject having, however, failed, and the trick of altering the plan of the mine in a report issued by some parties having been exposed, and admitting of no defence, there was substituted an attack on the Inspector, under the form of a vindication of the butties, who, it was at first said, ought to have been proceeded against instead of the mine agent, and a controversy as to the supply of coal, based upon a single sentence used by the Inspector after stating the extent of the annual get of coal in his district. The complaint as to this remark is that it will injure South Staffordshire, from the impression to be created that its supply of coal is being rapidly exhausted. I cannot conceive how the injury is to arise. The writer points to greater economy in raising and using coal as desirable; and what can tend to enforce this more effectually than to create the impression that there is a real necessity for it? People may dispute Mr. Baker's anticipations, but it is hard to see how they can cause injury to the district. Not one word is said in answer to the specific challenge thrown out as to the actual duration of the supply possessed by the great proprietors of minerals in the district.

One word as to Mr. Baker's alleged severity in enforcing the observance of the provisions of the law he is appointed to see carried out. Probably his predecessor was less strict. But what is more natural than that on the new introduction of legal regulations time should be given for them to become generally understood, and that early offences should be dealt with mildly? The Act for enforcing regulations in the management of mines, with a view to human safety, has now, however, been long in operation. Its provisions are well known, there has been time to adapt the organisation of the collieries to what is required, and offences now are less excusable than in the early application of these regulations. Mr. Brough has since my first letter appeared secured an authoritative extension of the application of the provision for securing ventilation, in comparison with which all Mr. Baker has sought to do seems mild indeed.

I will add one word. The Inspectors are appointed to enforce a law designed to diminish the loss of life and limb in mining, and for nothing else. Since Mr. Baker's appointment a very satisfactory decrease of deaths has taken place in his district. He is evidently anxious to carry the improvement still further, and with those who rightly estimate the human element in the question, that fact will far outweigh accusations brought against him, evidently prompted by a motive which is studiously kept out of sight, and will amply justify me in defending a man who, in virtue of his position, cannot speak on his own behalf. —— OBSERVER.

THE BROMFORD COLLIERY PROSECUTION.

SIR,—As there is no response to my appeal, in the Supplement to the Journal of Nov. 7, I must again call upon Mr. Brettell, of Dudley, to state openly and without equivocation whether or not he is the author of those three plans that you gave us in the *Mining Journal* which bore his name, but which were so dissimilar? The whole profession demand it of him: for they cannot believe so respectable a man could make different plans—as it may be inferred, for particular purposes. —— SURVEYOR.

COLLIERIES IN LANCASHIRE.

SIR,—As an instance of the great depth to which coal mining is now prosecuted, and as an example of engineering skill in working and raising coal to the surface, I send you a brief description of the operations in hand in sinking to, and in working coal at, the Rosebridge Collieries, near Wigan, and also in working coal at Douglas-bank Colliery, on the north side of Wigan. These collieries are leased by Mr. John G. Morris, and are under the management of Mr. William Bryham.

The ROSEBRIDGE COLLIERY is worked under an area of about 120 acres; it is bounded on the west side by a fault up-throw to west 175 yards, and on the east side by a fault up-throw to east 550 yards. The principal plant of three pits is situated near the latter fault; a trough or sinclinal axis runs through between the pits. The measures rise from it to the west about 1 in 6, and to the east about 1 in 5. There are three deep pits—the Caroline pits, 40 yards apart from their centres, are downcasts, the west one is 450 yards deep to the Wigan 5-feet coal; the Middle pit is sunk through the Cannel and yard seams to the depth of 702 yards, but the Wigan 4-feet coal only is drawn through it, from the depth of 470 yards; the east pit, 17 yards distant from the middle pit, is the upcast for the three seams, and Cannel is drawn through it from the depth of 591 yards. It is also sinking, and is now sunk to the depth of 702 yards from the surface, these being, I believe, the two deepest pits in this country. The middle and east pits are sunk at nights, after coal work is finished; the sinking proceeds at the rate of 10 yards per month in each, including the bricking. The large winding-engines are used for drawing the stones from the sinkers, by means of a tail-rope attached to one of the cages. The material is drawn to the Cannel and 4-feet seams, respectively. The water met with is small in quantity, and is drawn by tubs. The yard coal is being worked and holed round the two pits; it is 673 yards deep. The coal is drawn from it during the day by an engine placed in the west engine-house, with two 12-in. horizontal cylinders, one drum, and one tapered steel rope, being 1¼ in. at the inner end, and 1⅛ in. at the outer end. This rope passes down the side of the middle pit, and afterwards, under the 4-feet seam, is brought into the centre, four sheaves being required to guide it in this position. The coal from the yard seam is raised by this rope up to the Cannel, from whence it is drawn to the surface at the east pit. The two west, or downcast, pits are 12 ft. diameter, and the east, or upcast, pit is 16 ft. diameter. They are walled throughout with 8-in. wedge-bricks, except where tubbing is inserted, 35 yards in depth, at the Ince coals. One coupled winding-engine is placed between the two downcast pits—one cylinder, horizontal, 36-in., one cylinder 30-in., 5-ft. stroke each, double beat-valves, piston-rods; at both ends the rope-rolls are 18 ft. and 17½ ft. diameter, at the first lift, respectively, for each seam. These ropes are steel and tapered, being 4 in. by ⅝ in. at the inner end, and 4⅛ in. by ⅝ in. at the outer end. By this arrangement of the pits and engine the ropes are both taken over the top of the rope-rolls, and bend in the same way over the pulley; the pulleys are 12 ft. in diameter. There are four boilers for this engine, plain cylindrical, 36 ft. by 5½ ft.; one cage for each pit, which carries four tubs, in two tiers=30 cwts. of coal. The cages run each in two wire-rope guides. The engine drawing from the east, or Cannel, pit is placed to the east of that pit, has two 36-in. horizontal cylinders, 6-ft. stroke, double-beat valves, direct-acting, 40 lbs. steam pressure, rope-rolls 20 ft. diameter at first lift. The ropes are steel, a little larger than those in the downcast pits. The whole are enclosed in a brick house, 60 ft. by 30 ft. inside. The ropes, in this case, pass over the top and underside of the rope-rolls, respectively, and over 15-ft. pulleys. This engine works two cages in the pit; each cage carries four 7½-cwts. tubs, in two decks=30 cwts. of coal. The cages run on two wire-rope guides at great speed, are drawn in about 50 seconds at this speed, drawing large quantities of coal. The ropes are replaced at the end of about 18 months, though they do not show signs of much wear. This is due, no doubt, to the large size of the rope-rolls and pulleys, showing the benefit of these appliances, both in safety and economy. There are six boilers for this engine, plain cylindrical, 36 ft. by 5½ ft., each furnished with Jukes' self-feeding apparatus. Slack alone is used; is thrown on the dead plate, and carried gradually forward by the revolving fire-grate. The head-gear is 50 ft. high, the pulleys are fixed in the back-stays of the head-gear, making it of a light and also of a strong construction.

Each of the ropes is furnished with a *disengaging hook*, whereby in case of overwinding the cage becomes disconnected with the rope, and rests immediately on two catches, which allow the cage to pass upwards but not downwards. The hook consists of three plates of wrought-iron fastened together; the middle plate projects beyond the others at one side, the outside plates bear the weight of the cage, and have each a notch at the bottom, a small brass pin holds them firmly in their working position; should the hook be drawn up to a hole through the top of the head-gear, before it will pass through this hole the middle plate must be brought flush with the outer plates at the sides, which cuts the brass pin by this movement, and forces the link out of the recess in the side plates, the three plates in this position have each a notch in the bottom in the same line, and the link of the chain is thus released instantaneously. The value of this invention was lately put to a practical test in a case of overwinding; the cage was suspended in the catches; though some damage resulted to the engine-house, the head-gear was not at all damaged by the accident. This contrivance has been in constant operation eight years at the Deep pit, and is the invention of Mr. Bryham, jun.

On the north side of the pit the Cannel and King coal are worked together; there is 2 ft. of shale between them, but this sometimes thickens to 30 ft.; the King coal is left when the shale is more than about 4 ft. thick; the holing is made in the shale. The mode of working this seam is on what is called in the district the "modified long wall system." The levels are first driven out from the pit to the boundary in three passages; out of these up-brows to the rise, also in threes, about 400 yards apart, are driven to the boundary; from these upbrows levels are started on each side, about 100 to 150 yards from the top, and from these levels the whole of the coal is taken out by long wall up to the boundary; the roads are made through the goaf, 10 yards apart, one kept a little in advance of the other; there is sufficient stone and refuse in this seam to stow the goaf close up; when the roads begin to swell close up a new cross-road is formed near the face, and the old roads discontinued. After this breadth is taken out other levels are started 150 to 200 yards below the former; the coal is taken out by long wall up to the first levels, and this process is repeated, the coal being gradually worked out homewards to the pit. The Cannel and King coal are each separated underground into three kinds—large, riddled, and slack. One collier and one drawer occupy a place, who send away about 5 tons of coal per day: 90,000 cubic feet of air per minute is supplied to the Cannel workings. The furnace in the Cannel seam is 8 feet square, 4¼ feet high, close in front; 14,000 cubic feet of fresh air is supplied to it under the fire, the air from the workings passes through a separate drift; this furnace consumes 4 tons 16 cwts. of coal in 24 hours. The levels and upbrows in the Wigan 5-feet and 4-feet seams are now being driven out towards the boundary in three passages, and the coal will be worked backwards by the same method as that above described. Davy lamps only are used in the workings of these pits, secured by padlocks. The mines are subject to sudden influx of fire-damp from the bottom, as well as a regular production from the coal; no gunpowder is used, the coal is brought down by wedges.

The workable seams sunk through in this property are as follows:

		Depth from surface.		
1.—The Ince Series—The Yard seam	Yards	87	0	1
—The 4-feet seam		134	1	9
—The 7-feet seam		163	2	10
—The Furnace seam		186	1	11
2.—The Pemberton Series—The 5-feet seam		270	2	3
—The 4-feet seam		295	0	7
3.—The Wigan Series—The 5-feet seam		445	1	7
—The 4-feet seam		466	1	8
—The 9-feet seam		495	0	6
4.—The Cannel seam		591	0	0
5.—The Orrell Series—The Yard seam		673	0	0
6.— ditto —The Arley seam, estimated to be..		800	0	0

The two last seams are intended to be worked from the east pit, when the Arley coal is sunk through; one rope to each seam. A furnace will be placed in the Yard seam.

A furnace is placed in the Wigan 5-feet seam, is 8 ft. square, close in front, supplied with 14,000 cubic feet of fresh air per minute, consumes 3½ tons of slack in 24 hours; about 56,000 cubic feet per minute supplied to the 4-feet workings, the same quantity to the 5-feet, which enters the upcast through dumb drifts=the two seams, 112,000 cubic feet per minute; Cannel seam, 90,000 cubic feet per minute; two furnaces, 28,000 cubic feet per minute: total, 230,000 cubic feet per minute, with a consumption of 166 cwts. of coal in 24 hours=131 lbs. per minute=17,692 cubic feet of air per pound of coal used. There are nine screens at the top of these pits, on the plain and rotary principle, the large coal and Cannel being all screened.

The Ince and Pemberton series of coals are all exhausted in this property, with the exception of the Furnace seam, which is worked in a pit to the north-east of the Deep pits, 186 yards deep, 10 feet diameter, having a lifting set of pumps in it 45 yards deep, 7 inch diameter. No. 1 pit, west of the Deep pits, also works from the Furnace seam, 180 yards deep. Winding-engine, one 14-in. horizontal cylinder, 3-ft. stroke. Compensating drum for ¾-in. steel wire-rope; the drum is 4 ft. diameter in the middle, and 7 ft. at the outside; draw coal in baskets, carrying 7 cwts. each, guided by wire-ropes and carrier. Beam pumping-engine, with two cranks, long connecting-rods, and T-bobs; pumps from the depth of 200 yards, in three lifts of 10 in., 11 in., and 13 in. diameter at top. There are three one-tubed boilers for the two engines, 20 ft. by 6 ft.

DOUGLAS BANK COLLIERY.—There are two pits sunk to the Cannel seam in this property, 518 yards deep 16 feet diameter, 30 yards apart, one downcast, one upcast: 17 yards of tubbing, in 2-ft. cast-iron rings, in each pit; 58 yards down to the bottom of it, the remainder of the pits is walled with 8-in. common wedge bricks. Winding-engine north side of the pits, draws from the Cannel seam, has two 30-in. horizontal cylinders, 5-ft. stroke, 45 lbs. steam pressure; one compensating drum, 18½ ft. diameter in the middle, 26 ft. diameter at the outsides—the outsides are in line with the pullies. The drum is 7 feet wide, and 90 feet distant from the centre of the pit to its centre; engine draws load in 50 seconds, enclosed in house 50 by 30 feet. Steel wire-ropes are used, 1¼-inch diameter; some of these have been worn three years in constant work on this drum. Five boilers, plain cylindrical, 36 by 5½ feet. The winding-engine on the south side of the pits draws from the Pemberton 4-feet seam, two 24-in. horizontal cylinders, 5-ft. stroke, 50 lbs. steam pressure. One plain drum 18 feet diameter, ropes same as the other engine, pullies 16 feet diameter. The engine draws from the depth of 200 yards. The 5-feet coal is dropped down to the 4-feet, or is got by tunneling through faults from the 4-feet seam. There are two cages in each pit, each carrying four tubs in two decks, of 6 cwts. each=24 cwts. of coal; wire-rope guides and disconnecting-hook furnished to each cage. In working the Cannel seam levels are extended to the north and south, and upbrows to the rise, as before described; also downbrows to the dip, where engine-power is applied. An engine, 70 yards above the north level, hauls from two downbrows, has two 18-inch horizontal cylinders, 3-ft. stroke, 40 lbs. steam-pressure; two drums, one for each downbrow, draws six tubs by one, while the empty tubs are run down loose with the other drum. Two boilers, underground, 30 by 6 ft. The Cannel is here worked alone, has rock underneath, and the King coal beneath is not got; 18 in. of top taken down for height in the stall roads, with which the pack-walls are built, and partially fills up the goaf, 3 ft. taken down for the main roads; stall roads 10 yards apart. Two ponies used in the north side of the pit. Furnace is 9 ft. wide, 7 ft. long, 4½ ft. high, close in front, consumes 96 cwts. of coal in 24 hours, 12,000 cubic feet of air supplied to it per minute, and 5000 to the boilers, 91,000 supplied to the workings=103,000 to furnace and workings.

In the Pemberton 4-feet seam a 10-horse engine is placed 30 yards north of the pit at the side of the level, is intended for hauling by an endless rope passing round two 4½-ft. wheels; plane 26 yards long. Another hauling-engine, 50 yards above the south level, hauls from a downbrow 650 yards long; there are branches to the north and south from it at various points which it hauls from, with one drum only. This engine has two 12-in. cylinder horizontal, 2-feet stroke 40 lbs. steam-pressure, two boilers 30 by 6 feet, each fitted with two safety-valves, one float and whistle, one steam-gauge, and glass-gauge.

Another engine, 17-in. horizontal cylinder, 2½-ft. stroke, works a blowing cylinder of 14 in. diameter, erected for working coal cutters or other engines by compressed air; 200 yards of 2-in. pipes are laid down from the receiver to where the coal-cutters have been tried in the 4-feet seam. Two of the coal-cutters were on a new principle, by Mr. Jones, of Liverpool, and one by Mr. Melling, of Ince, near Wigan. Four horses are at work in this pit. Both the 5-feet and 4-feet seams are got by the modified long wall system. The 5-feet seam has a bad roof; the 4-feet seam has a good roof. The roof is kept up with chocks and props; when these are drawn the roof falls, and furnishes the stone for building the pack-walls at the road sides. The holing is made in the bottom of the coal, and is got down by wedging. Safety-lamps only are used in the workings. The furnace in the 4-feet seam is 9 ft. by 7 ft., use 72 cwts. of slack in 12 hours, none at nights; 12,000 cubic feet of air per minute supplied to the furnace, 5000 to the boilers, 71,000 to the workings=83,000 cubic feet to workings and furnace, add 103,000 cubic feet to workings and furnace in the Cannel seam: total, 186,000 cubic feet=10,300 cubic feet per pound of coal used. The ventilation will be affected a little by the boiler fires. The colliers commence work at 5 A.M., leave from 1 to 5 P.M.; coal drawing commences at 6 A.M., stops at 5·30 P.M. Colliers are paid 9s. 6d. per score of 20 tubs in the 4-feet seam; the coal is riddled, and three kinds of coal are made. The packing and pillaring in the goaf is performed by day-men, either in the day or night-time. The large winding-engines at both establishments are from the works of Mr. R. Daglish, of St. Helens.

The coal from these collieries is sent to Liverpool, Manchester, and other towns in Lancashire, partly by means of the Lancashire and Yorkshire Railway, and can be put on the London and North-Western Railway; and an equal part is sent by the Liverpool and Leeds Canal, and by the Duke of Bridgewater's Canal, which branches off from the former to Manchester. Very little water is found in the shafts, what is produced is carried down by pipes for the supply of the boilers.

Nov. 17. —— C. V.

PREVENTION OF COLLIERY ACCIDENTS.

SIR,—I do not think that it would be in good taste to make any particular remarks upon the inaugural address of Mr. Elliot, before the Institute of Mining Engineers, or to attack any of the views put forth there by him. It would, indeed, be faint praise to say that the address is most remarkable and original, breathing talent in almost every sentence. But when Mr. Elliot proceeds to publish his views when making an election speech, as he did at Hetton, the other day, these views are, I think, fairly open to criticism. He there said—"Many of them, no doubt, had read the address to which he had alluded, and in it he enunciated a principle which would have the effect, when carried out, and he believed that it would be carried out in a short time, of superseding the use of gunpowder in pits, and, therefore, reduce those dreadful explosions to an incalculable extent. He had laboured on this subject for more than 20 years; the invention was now complete, which would entirely supersede the necessity of gunpowder, and thereby do away with the use of naked lights, which had caused so many accidents."

Now, I would, with all deference, submit that there is some mistake here. The cause of the accidents alluded to is, in the first place, the accumulation of explosive gas through imperfect ventilation, and the first effort of the mining engineer ought to be to prevent those accumulations.

The invention alluded to, if fully successful, which is earnestly to be hoped for, will possibly reduce the number of explosions, but not to any great extent if imperfect ventilation is allowed to go on, and any workings allowed to proceed where the air is in an explosive state, which state of things actually appears to be assumed as a matter of course by the speaker. If this is once allowed, and a lamp is used which is declared by the same speaker to be unsafe, how are explosions to be avoided or prevented? —— M. E.

WORKING COAL WITHOUT GUNPOWDER.

SIR,—Perhaps the most striking feature in Mr. George Elliot's very instructive and interesting address to the North of England Institute of Mining Engineers, is his statement that the use of gunpowder could be avoided, or at least ought to be avoided, in the working of coal; and upon this I may, perhaps, be permitted to make a few observations. Mr. Elliot states that he has given the subject a quarter of a century's attention, and that his efforts to force down the coal with quicklime and by hydraulic pressure were alike unsuccessful; but he refers to the three contrivances being in use in his collieries in Wales, which are at present working well. As the whole subject is one of paramount importance, I trust Mr. Elliot will lose no time in making known the details of these inventions for the benefit of mankind. It is often said that all the great improvements in connection with a particular branch of trade come from without, and that those engaged in a trade seldom care to depart from the beaten track; but that there are many noble exceptions to this rule the inventions of the Stephensons form striking instances. If Mr. Elliot succeeds in superseding the use of gunpowder, we shall have a striking example—for the discovery will permit of the abandonment of naked lights in collieries altogether.

Of course, I have no means of knowing the nature of the inventions to which Mr. Elliot refers as being in use in South Wales, but I presume he alludes to some of the mechanical cutters, or, perhaps, to some other mechanical arrangements for wedging down the coal; for he states that hydraulic pressure proved a failure; but from certain experiments I have seen I believe that it will ultimately be found that air will accomplish that which water failed to do. It is a curious fact that the slightest pressure of air at one end of a tube is instantly communicated to the other, or, in other words, that the air is not retained in the tube, as one would suppose it would be by friction against the sides; this holds good for an almost indefinite length of tube. I have myself seen air act in an inappreciable time in raising a 14-lbs. weight at the end of 250 ft. of ¼-in. tubing. In the case in question, the end of the tube was made firm to an India-rubber bag, with a stop-cock fitting, and the 14-lbs. weight was placed on the bag. At the other end (that at which the power was applied) there was a small cylinder of about 3 in. diameter and 2 in. stroke; and a sharp pressure of the hand upon the handle or rod attached to the piston instantly made the 14-lbs. weight jump, although the 250 ft. of tubing intervened. The circumstance which most surprised me was that it really appeared less trouble to move the weight with the piston than by lifting the weight itself.

Now, with water the case is totally different. With the above arrangement water did not lift the weight at all with a sharp pressure, the tubing merely swelling near the cylinder, and returning to its original form as soon as the pressure was removed. By holding down the piston for two or three seconds the weight was lifted, but even then much less than with air. With air the weight was lifted as with a blow, with water as with a slow thrust; whence I conclude that water is inclined to take the form of cones, like sand. But be this as it may, I believe that air could be used instead of gunpowder, by boring the blast-hole in the usual way, and then affixing stout iron tubing to its mouth by means of a mechanical contrivance, and with a ring of India-rubber to make it air-tight. Upon a sudden pressure being then applied, by a cylinder at the other end, I feel certain that the burden would be removed. Perhaps some of your practical readers will give the suggestion a trial. A. J. R.

Newcastle, Nov. 16.

THE INTERNAL TEMPERATURE OF THE EARTH.

SIR,—The theory enunciated by Mr. George Elliot as to the probable cause of the increase of temperature in deep mines is highly important, for if it can be maintained it will remove all fears as to the approaching exhaustion of our coal fields. As Mr. Elliot's arguments against both the received theories referred to are perfectly tenable, it is but fair to suppose that his own theory is not propounded without due consideration. The equality of temperature in the Monkwearmouth pit and in the Welsh mine he mentions, at an equal distance from surface, and regardless of the position of the places tested with respect to the centre of the earth, appears to be convincing evidence that internal heat has nothing to do with the question; and it is equally certain that if atmospheric pressure were the cause, the facts mentioned by Mr. Elliot would also have no existence. Now, that the weight of the superincumbent strata is the true cause of the increase in heat appears very feasible, for if we notice the pieces of iron that fall from a punching-machine we find that their temperature is enormously increased; indeed, when only ½-in. plate is being punched the pieces are too hot to hold; and we have only to ask what causes this increase of heat to find a considerable justification for Mr. Elliot's opinion.

The reason of the pieces of metal becoming heated is, no doubt, that heat is developed by the pressure—it cannot be by friction, be-

cause the pieces I allude to are not subjected to any, as only the face of the punch touches them; and a further peculiarity which I noticed was that the face of the piece of iron removed, which, of course, had not been touched either by the side of the hole or by the punch, was quite as hot as any other part. It is, therefore, not unreasonable to suppose, as Mr. Elliot has done, that the increase of temperature is due to the same cause. But I do not exactly agree with him when he remarks that if we take the sea level as our starting point all deep workings will be found to increase in heat in proportion to the distance above it at the surface, because I think that where the mountain has been formed by upheaval there would probably be a diminished pressure, owing to the upheaved strata becoming as it were partially self-supporting, like the arch of a bridge—this may account for the exceptions noticed by Mr. Elliot, and may really tend to prove the accuracy of his views. At all events, I think that this explanation of the discrepancy between theory and fact is quite as plausible as that put forward by Mr. Elliot, that it arises from the exudation of highly compressed gas from strata. H. R. F.

Seaham, Nov. 17.

UNDER-SEA COLLIERIES.

SIR,—That Mr. Elliot's theory concerning the increase of temperature in deep mines is of great importance to those intending to work the coal deposits beneath the German Ocean, I am willing to admit; but I am of the most decided opinion that if it be determined to work them the operations should be carried on either entirely by a State, or under very strict State supervision—a philosophical system of working being determined upon before a ton of coal is removed. It should be remembered that the object in view in developing the German Ocean seams is to maintain the commercial supremacy of the country, and that if the old maxim, "Let him who lives longest fetch fire farthest," be acted upon, the attempt to develope those seams will rather ruin than advance our commercial prosperity. There is, I believe, but one mode of working large under-sea deposits successfully, and that is a mode which it would be impracticable for individuals, or even irresponsible public companies, to carry out, because the whole of the coal which is considered to be within reach must be got by a single series of workings, in consequence of many other difficulties besides that of increase of temperature having to be met. In the working of the undersea seams the relative merits of long wall and pillar and stall could not be raised, for the former would alone be applicable if waste is to be avoided. I consider, moreover, it would have to be long wall on a large scale. Suppose it were concluded that 20 miles under the ocean bed is capable of being worked, I consider that the first step should be to put down a couple of shafts 24 ft. square and 50 yards apart at the extreme north, and a similar pair at the extreme south of the area proposed to be worked. From these shafts four levels on each seam should be driven out the full 20 miles, and all perfectly parallel to each other, and the four should then be turned out at right angles to meet in the middle of the area, 20 miles from the shore. A third pair of shafts should be put down midway between those mentioned, so as to have the levels out to meet those above named by the time they connect. The entire area should then be worked back long wall way, and I am sure the difficulty would be reduced to the minimum. By this mode of working the whole of the coal could be got, and as the gradual settling of the superincumbent strata would not be interfered with, no danger need be anticipated from the percolation of the water, which I think might be met with if the seams were worked separately.

With regard to the carriage of the men to and from the working faces, I see no reason why an ordinary locomotive of small size, and with arrangements for condensing the steam, should not be employed to draw a train of carriages for the workmen, and to bring the coal to the pits' bottoms as soon as got. The levels should, of course, be of large size, for the sake of ventilation, and in such levels there would be no difficulty in running a train of ordinary coal trucks, which would permit of the coal being delivered to the consumers in the best possible condition, for it is obvious that the coal could be loaded into the trucks at the working faces, and the trucks being lifted by suitable machinery to surface need not be again removed until the ship's side or the final destination was reached. With four six-hour shifts daily an enormous quantity of coal could be raised, for the men, having 18 hours out of the 24 for rest and recreation, would be always fresh for work, and able to earn as much as they do at present in considerably longer time. COLLIER.

Wigan, Nov. 16.

THE SMOKE NUISANCE.

SIR,—In the Manchester district the smoke nuisance is at present creating a very large amount of attention, and some of those supposed to represent the manufacturing interest have been complaining that the compelling of manufacturers to consume their smoke is an unjustifiable tax upon them for the benefit of the general public. But the fallacy of this kind of argument is apparent, if it be considered that every particle of black smoke suffered to escape represents the loss of fuel which might be profitably consumed. The argument mentioned has been very satisfactorily met by the observation that the more it becomes requisite to compete with French and Belgian rivals, the more necessary is it to adopt means to prevent waste in every particular, including that arising from the waste of fuel in the shape of smoke.

Mr. Edw. K. Dutton, M.E., of Manchester, mentions three principal causes of the production of smoke—the bad form or construction of many of the boilers now in use, the insufficiency of the capacity or number of boilers employed, and the want of proper and sufficiently skilled attention—and he affirms that a sufficient removal of any of the above causes will pay the manufacturer. In the first place, as to the form of boiler employed, the difference between a very good boiler and a very bad one, as regards the consumption of coal, will perhaps exceed 100 per cent., whereas the first cost of the good boiler may only exceed the bad one by 25 per cent. It is to the interest of the manufacturer that whilst he is spending thousands in the erection of an ornamental mill he should spend a few hundreds extra in procuring the best boilers and the best engines that can be had. If foreign competition will not admit of the expenditure of 100*l.* in order to enable the manufacturer to utilise all his fuel, and not to send 25 per cent. into the atmosphere, how is it that it will admit of the erection of a sumptuous engine-house, glittering with polished iron and brass, and with the cylinders cased with polished mahogany? In the one case the outlay will be repaid in, perhaps, six months by the saving in fuel, in the other the outlay represents so much sunk capital returning no interest. The second cause is, perhaps, the most fruitful in the production of smoke. In all cases where, from an insufficiency of boiler-power, the fires have to be urged, the result must inevitably be the production of smoke, and a consequent waste of fuel. In many cases where at present black smoke is discharged into the atmosphere the addition of a good boiler to those already in use, or the adoption of one of greater power, would put a stop to the nuisance, and save the owner, perhaps, 20 per cent. in the consumption of fuel.

The absence of proper and sufficient skilled attention is another cause of much of the evil. Without a sufficiency of boiler-power, the best stoker cannot prevent the emission of smoke, and, therefore, the waste of fuel; but, on the contrary, however perfect and sufficient the apparatus, without proper attention, fuel will be wasted. When a number of boilers are at work the cost of the most careful and skilful stokers will be amply repaid. Where only one boiler is employed it is too often the case that the management of the boiler devolves upon a labourer or even a boy, chosen without any regard to his suitability to the post. But, whatever the extent of the employment of steam-power, it will always remain that the adoption of efficient and suitable means to effect the perfect combustion of the fuel, so far from increasing the cost of production of the manufactured article, will, to a certain extent, lessen the said cost, and repay the manufacturer for his outlay.

Now, that Mr. Dutton's arguments are generally good I think we must all agree, but I think that he lays a little too much stress upon the insufficiency of boiler-power, or, perhaps, it would be more accurate to say that in the Manchester district insufficiency of boiler-power is not the general fault. Coals are cheap, and first-rate boilers are obtainable on the spot, so that there is much less inducement to limit the boiler-power than in many other places; but that sometimes boilers are driven hard can be readily understood, and in my opinion no boiler or boiler-furnace should be so arranged that it cannot be hard driven, and that without making any amount of smoke, in case of necessity. The great secret of preventing smoke is, no doubt, to have a good red fire at the back of the furnace, and the fresh fuel at the front, but to secure this much more care and attention is required than can usually be obtained from an ordinary stoker; and considering that, at the best, stoking is anything but a pleasant employment, I consider it scarcely reasonable to expect it. An invention was some time since proposed which would, I think, effectually meet the difficulty: it was a double furnace, which could be fired at either end, so that the products of combustion from one fire could always be made to pass over the other fire. By firing alternately, therefore, the requirements for preventing smoke were obtained without the slightest inconvenience. I do not know whether any of these furnaces are still in use, but the adoption of them is well worthy of consideration. I think it would have been an improvement to use branch flues, leading from near the middle of each furnace into the main stack, with dampers, so as to obtain a still greater change in the alternate direction of the current. In the case of manufacturers employing a large number of boilers, I believe the arrangement might be made most economic. Suppose, for example, half-a-dozen boilers have to be set, I would suggest that three walls be built parallel to each other, and the boilers placed side by side upon them; the spaces between these walls should form the furnaces—that is, there should be two pairs, those of each pair backing each other, and having a central wall to divide the ash-pits. By firing alternately, the heat could always be equal to all the boilers, and absence of smoke, with the utmost economy, would be attained. P. A.

MECHANICAL VENTILATION.

SIR,—Although there can be no doubt that comparative experiments afford the best possible means of testing the relative merits of rival inventions, it is essential that every facility should be offered to those interested in each to see that the best result which the machines are capable of producing are actually obtained. In the recent competitive trials made at Blaina this very important point appears to be altogether neglected, so that the results shown are of comparative little value, although at first sight they would appear to give one of them a decided preference. The figures show that, with the engine making 60 strokes per minute, Guibal's fan gave 650 feet of air (measured), water guage $\frac{5}{8}$ in., whilst that of Mr. J. G. Jones gave 1050 ft. of air, water-gauge, $1\frac{1}{4}$ in.; and by increasing the speed of the engine to 75 strokes per minute Guibal's gave 775 ft. of air, water-gauge $1\frac{3}{8}$ in.; and Jones's, 1700 ft. of air, water-gauge $3\frac{1}{8}$ in. Now, of course these figures may be very useful, but is is difficult to discover what they prove, except that, at least with Guibal's fan, no care was taken to produce the maximum effect of which it is capable; whether the results given for Jones's represent the maximum, of course I cannot guess, but, unless the most favourable speed had been previously ascertained, it is very probable that they do not. Taking the first results, the excess of air pumped by Jones's machine was 60 per cent., whilst in the second case the excess was 120 per cent., or, in other words, nearly $2\frac{1}{4}$ times as much air was pumped by Jones's as by Guibal's.

Now, if 75 strokes per minute were the speed calculated to give the maximum result with each machine, the comparison would have been of some value; but this is not the case, for we see that whilst the addition of 25 per cent. to the speed of the engine only produced 20 per cent. more air with Guibal's fan, the same increase produced more than 60 per cent. more air with Jones's: all that can be concluded from this is that Guibal's fan was run at too high a speed. No doubt, if some friend of Mr. Guibal were to construct models of the two machines, and test them with a view to show an equally favourable result for Mr. Guibal, it could be quite as easily done; but as it would prove nothing, it is unnecessary to incur the trouble and cost. If it really be desired to prove the relative efficiency of the two fans, there are plenty of Guibal's in actual operation in the North of England, against which Mr. Jones could test his invention, and thus settle the question; but I think that in any competitive trial, the course pursued and the results recorded, should slightly differ from those at Blaina, inasmuch as it is desirable that the relative economy, as well as the relative efficiency, should be ascertained.

It must be evident to the most casual observer that simply to run two engines at a high speed, and compare the results, is scarcely fair to either fan, and is especially unfair to one which gives high results with a low speed. In my opinion, the proper course would be to construct fans, according to the two inventions, of equal size, and work them at varying speeds until each gives its maximum result. Both fans should then be worked for (say) six hours continuously, and the cost should then be ascertained. This would satisfy one question. The next object should be to test one of Jones's fans, constructed to give (say) 200,000 cubic feet per minute, against a Guibal fan constructed to give the same quantity; run them at a speed calculated to give that quantity for six hours, and again ascertain the cost. Of course, it will be understood that the conditions must be similar—such as depth of mine, length of air-ways, &c., as otherwise inaccurate conclusions might be arrived at. It seems to me that the mere comparison of fans of similar diameter, without regarding either first cost or cost of working, is most unsatisfactory, and is quite as likely to prove as prejudicial to one inventor as the other. F. C. H.

Nov. 18.

EARTHQUAKES.

SIR,—These terrible visitations which have such disastrous effects in the countries where they occur, have still their uses in the great arrangements that are continually going on for the benefit of mankind: if not for the generation in which they happen, they are so for those that are to follow. Of the causes of these shocks and agitations of the earth's crust we are ignorant, but there are many speculations on the subject, as indeed they must remain, for who can speak with any authority as to the action of the various matters composing the interior mass of the earth that we inhabit? We do not yet understand that which composes the crust that we see around us, and it is certainly impossible that we can know what is beneath it.

It may be thought to be inhuman to speak of the benefits that are derived from earthquakes, but they are so frequently forced upon us in journeying over the crust, that they cannot be unobserved by any who move over it with their eyes open. I will instance some of the advantages of such convulsive actions that have fallen under my limited observation, and commence with those I found on the eastern side of the Rocky Mountains. On the rising these steeps from the praries there are many depressions found in the present surface, that show by the growth of timber on them that that surface is of more recent date than of the hills around them, as the timber on the elevated lands is of a much older growth, and correspond with that of the general age of the trees of the surrounding country.

Where these depressions have taken place in the neighbourhood of the metalliferous portions of these regions there we find the richest placer diggings, which yield their gold freely from the disintegrated earths and rocks, which have been shaken down from portions of the mountain formations, in which the hidden treasures were entombed, placing them at the easy attainment of man; and have also made channels for the dissolving snow, forming the head waters and tributaries of some of the principal rivers of the country. All these diggings have proved most valuable to the present human family, by enriching many who have laboured therein. One great instance of this fact is illustrated by the results that have obtained in the rich district of Hamilton, that is producing, and has produced, such vast amounts of treasure. These disintegrations are found through the whole eastern escarpement of these mountains, and none are without their utility.

On passing over this range to the west we come upon the "Great Basin," lying between the Rocky and the Sierra ranges of mountains, which is 630 miles across, and about 800 miles from north to south. This vast area was one large inland sea, and it remained so for a long period after it was embayed; this fact is very perceptible, as the rocks, at certain elevations above the present levels of the ground over which we now travel, show the shore lines with unmistakable correctness. We find this enormous portion of the central continent containing many thousands of square miles unwatered, with the exception of some few salt lakes, the surface of which stands a level of from 3500 to 4500 feet above the present ocean; and these always retaining the same position, not being much elevated by the discharge of the rivers that flow into them during the dissolving of the snows from the surrounding ranges, nor depressed by the evaporation of the summer heat.

What but an earthquake could have opened a channel, or channels, through which so tremendous a discharge of water that was confined in this vast sea could have found its way to the ocean, and through which the present lakes continue to use for each of their separate discharges? Thus we find that, in all probability, an earthquake was the cause of giving us of the present generation all of that yet undeveloped country, presenting hidden treasures of mineral wealth that has been unprecedented in the world's history.

In again passing west over Mount Davidson we come to the tract of country known as the Washoe district, containing the whole of the Truckee meadows, through which flows the Truckee river, along the bank of which runs the Great Pacific Railway. This plateau also was a large inland lake, as is the Tihoe, which forms the source of the river that waters this mountain plain, lying 5000 feet above the ocean level. The large body of water which was here pent up by the encircling mountains was let loose by the action of an earthquake, rending asunder the north-east range which forms the present canon, through which the Truckee river rushes in rapid course, discharging itself into the saline waters of Pyramid Lake, where its delicious freshness is lost amongst the briny waters of this inland sea, and at the time of its greatest freshets becomes so soon commingled with the saline waters of the lake, that at 200 feet from the river's debouch its freshness is not perceptible. In this instance, also, the human family has been benefitted by one of these visitations.

In crossing over the Sierras we come upon further evidences of disturbances by similar action, for in passing by the Sierra Valley route, near Fremont's Peak, we come upon an interesting country, where the north fork of the Yuba river runs in an evident earthquake channel, where we find a vast mass of slate rock, named the Butts, standing some 300 to 400 feet above the bed of the stream which has been riven, and now stands apart, showing a cleavage so apparently perfect as to show that, could the masses be again brought in contact, they would fit together in perfect exactitude. The displacements that have occurred on the Californian side of this range have been the cause of vast disintegrations, which have formed into deposits by the agency of water, and thus the rich diggings have been collected, and the conglomerate trenches, in which native gold is found, have been thrown together. These effects are found through the whole west side of the range. In pursuing this subject further west we come upon some gigantic effects produced by these disturbances of the crust of that portion of the continent.

The great valleys of the Sacramento and San Joaquin owe their present usefulness to the human family to one of these visitations, by opening the rocky range dividing the main ocean from the vast fresh water lake, that extended from the Tijone on the south to beyond Marysville to the north, and spreading from the Sierras to the Coast Range, having its discharge into the sea near Montarea, the water-wash of which is now quite perceptible along the whole range of mountains, as also the line of depression of its debouch.

A great convulsion, which cleft the rocky division between the ocean and this inland water, opened the present entrance to the Bay of San Francisco, and formed those noble headlands known as the Golden Gate, and through which the fresh water was let off into the Pacific Ocean, and the whole valleys of the Sacramento, San Joaquin, and San Jose were unwatered; and thus these most productive lands were prepared for the use of man, and on which now grow as fine grain crops as on any land on the face of the globe, as also fruits, and other products that cannot be surpassed. Added to which, this convulsion of nature formed one of the finest ports of the world, by leaving a tidal inland bay extending, 90 miles from north to south, of varied width, capable of containing the shipping of the world, and forming the finest port on the Pacific Ocean. Earthquakes have done other great service on the western countries of the continent of America, but which it is not necessary to enumerate, as enough has been said to show that these visitations, terrible as they may be, are not without their usefulness; and, in fact, California is indebted to them for its present wealth and important commercial position, which have turned the waste of waters into fruitful fields, at the same time forming a magnificent bay, and leaving two fine navigable tributaries in the Sacramento and the San Joaquin rivers, with many other minor streams of extreme value to the gold diggers.

The agitation caused by earthquakes, or shaking of the earth's crust, appear to take the same directions as the metallic ranges of the countries in which they occur; thus we find that those of both recent and former occurrence on the western continent of America have all taken a south-west and north-east direction, and we are, therefore, inclined to the opinion that they are connected in some way with the mineral formations of those countries, and may be of great utility in the primary formation of the mineral lodes.

The greatest disturbances of the earth's crust take place in the ocean beds, which if they occurred on land would deal death and destruction around, and the results would indeed be fearful, to the crumbling of cities, and the devastation of whole countries. No human mind can estimate the enormous force that could move at miles in depth so vast a weight of water, and give that stupendous body a momentum that is not lost in travelling through degrees in extent of its own element. It is, therefore, providential that the greatest disturbances occur beneath the vast ocean pressure.

The recent volcanic waves that have occurred in the Pacific must have been the result of a most tremendous submarine disturbance, as the waves are reported to have come on shore along the whole western coast of Lower California, and as far north as Santa Cruz, a distance of nearly ten degrees, and these waves broke on that shore near San Diego to a height of 60 ft. The propelling force that set this mass of water in motion is not to be estimated, when such waves in their passage had to pass through a constant, strong, and continuous north-west current, which runs for many miles into the deep sea, and, therefore, would afford very considerable resistance to an intruding body of water from a contrary direction. These waves came up from the south-west, and the course of the late earthquakes had a similar direction, commencing at San Francisco, and running through the country by Sacramento, Grass Valley, and Virginia City.

I encountered one of these waves (and never wish to see another) near the entrance of Bass Straits: this also came from the south-west, and was one uncrested mass, full 80 ft. above the ocean waves, and entirely unconnected with them. J. B.

Ramsgate, Nov. 11.

STEAM ON COMMON ROADS.

SIR,—The constant complaint made of the inadequacy of even the present railway system to meet the requirements of the country should cause fresh interest to attach to the long-neglected proposition to introduce steam on common roads, more especially as the prejudice against tramways is rapidly dying away, and as many new and satisfactory forms of rails have been devised. It is not, however, to the tramway system that I look forward to provide any great auxiliary to railways, because I consider that, except in large towns, where the introduction of street tramways would much relieve the traffic, and confer great benefit upon the inhabitants, the tramway would be but an objectionable form of railway, from the fact that when once laid its removal to suit varied circumstances would be as impracticable as the removal of our present railways. The number of miles of railway which at present lie idle, or nearly so, is almost beyond conception, and many lines seem to be made merely for the pleasure or profit of making them; certainly not as though they were intended to return profit for their use. Take, for example, Willesden Junction—there is the junction connecting the low-level lines with Harlesden, over which not half-a-dozen trains a-day pass, and the lines connecting the low-level with the Kensington line is still more useless. It would be just the same were tramways laid on common roads—they would speedily become suspended, or nearly so, and the outlay made for putting them down would be altogether lost

We are, therefore, thrown back upon the endless railway system, many modifications of which have been from time to time described in the *Mining Journal*. Of these, the flattest rail is secured by the invention of Boydell; but this has the inconvenience that it is exceedingly clumsy, and has a great tendency to knock itself to pieces. Those formed of flat pieces, hinged together, appear equally objection

able, because the difficulty of picking up the pieces passed over offer serious impediment to the progress of the machine.

The only other system which need be mentioned is that of Mr. Bray which consisted in the use of a hoop for the endless railway; and this is the system which will ultimately come into general use. It has been urged by some that this arrangement is merely equivalent to the use of a larger wheel, and that, therefore, it would be just as efficient and much cheaper to employ one large wheel, instead of a large and small one; but this is by no means the case, not one-fourth of the power is required when the two wheels are used. This arises, probably, from the circumstance that the leverage is so vastly different, acting in one case directly on the periphery of the wheel, and in the other from the centre. Now, I believe that if quickly-travelling locomotives, or locomotive omnibuses, upon some such system as that of Mr. Bray, could be organised throughout the kingdom, it would be of vast utility in aiding the railway interests. STEAM.

THE TREATMENT OF POOR COPPER ORES.

SIR,—In the address of the President of the Royal Cornwall Geological Society the following remarks occur:—

"ON SCIENTIFIC AID TO MINING.—Listen for a moment to what Mr. Hunt tells me on one or two points that touch us vitally. Many of the present copper ores in Cornwall contain pyrites. This pyrites, if properly reduced, would greatly increase the produce of copper, and that in the class of mines needing such aid—those where the ores are poor—it is not done. But on the Tyne, the Mersey, and the Dee, Spanish pyrites containing only one or two per cent. of copper is worked for copper at a good profit. The process is a chemical one, and is as available in Cornwall as on the Tyne, the Mersey, or the Dee."

The above remarks appear to attach a want of commercial knowledge to the mining interest in Cornwall, which I think the following statements will prove to be undeserved. For to my certain knowledge, for the last 20 years all poor copper ores containing about 30 per cent. of sulphur (pyrites) have found a ready market for sulphur and copper; also pyrites without copper, and with 35 per cent. of sulphur and above have been in demand to a far greater extent than the county could supply. But Spanish ores are richer for sulphur than Cornish, more easily calcined, and realise in consequence a trifle more per ton for the sulphur they contain. The copper in Spanish is, however, sold, as in Cornwall, by a standard, and that standard on the Tyne, the Dee, and the Mersey, is the Swansea standard, week by week, for copper.

Chemical processes for the reduction of copper pyrites cannot be as available in Cornwall as on the above rivers until coals and salt are equally cheap; for the quantity of the latter required greatly exceeds the quantity of copper pyrites; therefore, it will be cheaper to take this ore to the coals, for the manufacture of soda-ash and bleaching-powder, or chloride of lime. But for the manufacture of sulphate of ammonia, if the ammoniacal liquor is to be had in Cornwall, a few cargoes of pyrites might have the sulphur extracted in Cornwall, and the copper sent to Ticketing, or converted into sulphate of copper; and, perhaps, a few cargoes might be retained in Cornwall of pyrites for the manufacture of alum, sulphate of alumina, the clay being at hand at St. Austell, &c. But nine-tenths of this demand is for soda and chloride of lime making, and these manufactures, for the reasons given, must keep where they are.

The arsenical pyrites have long been turned to good account in Cornwall, in the arsenic works; and, if containing copper, sending to Swansea, for sale at Swansea standard; and I think it will be found, on enquiry, that at Tincroft and other mines they are not so far behind as Mr. Hunt intimates in the separation of copper from tin by roasting, and thus converting the copper into an oxide, which is then lighter than tin, and easily separated by its lesser gravity. It may also, in this state, easily be converted into a sulphate, blue vitriol, and, perhaps, pay.

The Cornish have, however, I think, nothing to learn in the way of making the most of their mineral produce. JOHN READ,

Chemical and Mineral Agent.

CORNWALL IRON MINES AS AN INVESTMENT.

SIR,—It is highly gratifying to observe the spirit and determination with which the Cornwall Hematite Company (Limited) has commenced its career to develope some of the best iron mines in the county, and to establish a regular market for the sale of Cornish hematite ore, which, when carefully selected, contains over 60 per cent. of metallic iron.

Happening to be in the neighbourhood of the company's mines during the past week, I took the opportunity of examining the workings in one of them, and I must unhesitatingly say that in my varied experience of iron mining I have never inspected a finer vein of hematite, both in size and quality, than I saw at the mine in question; the vein is an extraordinary one, and consists of large solid masses of rich iron, which any maker of first-class iron would be proud to have in his furnace. I was informed that the company have secured a large contract for all their production for ten years to come, at prices that will yield satisfactory dividends, and, therefore, I think the shareholders may be safely congratulated, and can look upon their holdings as a sure and highly profitable investment. I consider this property will soon be one of the finest in the kingdom, and I was highly gratified on my inspection to think that the company will, no doubt, be the means of opening, what I may almost term, a new field of industry for the mining population of Cornwall.

While in the district I was also afforded the opportunity of examining several of the tin mines that are now attracting considerable attention, amongst which were Royalton, East Royalton (a new undertaking that promises to become a great success), West and South Royalton, and others, and was altogether gratified at the lively appearance of the entire district, and as the subject may be of interest to investors as well as the public generally I may, with your permission, continue my observations in your next issue. AN ENGINEER.

London, Nov. 19.

THE RESOURCES OF COLORADO.

SIR,—Among the social and political revolutions of the present epoch which are quietly, but surely, acting on and re-modelling the different phases of society, the foundations of a commercial revolution are being laid, the results of which when perfected it is scarcely possible to calculate, or in their effect exaggerate, bidding fair, as they do, to shift the centres of commercial and financial greatness from the eastern to the western hemisphere. The Union Pacific Railroad, now completed, and running nearly 1000 miles, from Omaha, on the Missouri, making 2600 miles in a straight western line from New York, which reduced to time is now ran over in five days, has brought into the uses of the human family the richest agricultural country of the Western Continent, whose mineral resources are fabulous, but in calculating the future wealth and prosperity of this land will be the lowest in the scale. This territory, known on the old maps as the "Great American Desert" (and which will be hereafter designated the Great American Garden), consists of the States of Nebraska, Kansas, and territories of Colorado, Idaho, and Wyoming. Of these the richest in natural resources are Colorado and Idaho; the former of these two is the better known, and now that the branch road from Cheyenne, on the Union Pacific, to the city of Denver is graded, and rails being laid, to be completed in a few months, the heart of this wonderful land will be brought within five days of New York and 15 of London, and it is here that Nature plainly indicates the course of empire will plant the central source of power of the great American nation. To populate this entire region as densely as the State of New York would require 275,000,000 of inhabitants, for whom its area would give 4 acres of land to each human being. The mountains, wooded far up their sides, arrest the winds, condense, and cause them to precipitate their moisture in rain and snow, forming reservoirs, the sources of which are available for irrigation and power. The abundance of gold, silver, copper, iron, and the finest porcelain clay, has attracted a hardy and adventurous emigration, wild at first, but who have now gravitated to a sober, quiet, and orderly population, and for which Colorado stands pre-eminent. But it is eminently as a pastoral and agricultural region it will work out its great destinies. Its rich and productive valleys and arable lands, with a climate unsurpassed in the whole world; its rich grasses, winter and summer, render it the greatest stock-growing country known. This territory (soon to become a State) is nearly square in form, about 300° from north to south, 400° from east west, with an area of 110,000 square miles, or as large as Portugal, Denmark, Greece, Switzerland, Holland, and Belgium together. Colorado has the highest mean elevation in North America. We find here the connection of the basins of the great rivers—the Colorado carrying its waters through the Gulf of California into the Pacific, the Rio Grande emptying itself into the Gulf of Mexico. The greatest tributaries of the mighty Missouri and Mississipi, the Platte, Kansas, and Arkansas rivers. Colorado may be justly called the Switzerland of North America, on an enormously magnified scale, but not like the European, poor in mineral resources and fully explored, but a Switzerland richer than Saxony or Bohemia, California, and Australia combined, awaiting only for the advent of that industry which is sure some day to come, and put every other region in the world in the shade.

We will allude, firstly, to its great mineral products. Gilpin county is noted as being the first in which gold was discovered, and it has held its pre-eminence as being the richest, although the smallest, in the State, having furnished nearly two-thirds of the gold product of Colorado, and covers the choicest section of the great mineral belt. It lies on the eastern slope of the mountains, at an elevation of 8000 feet above the sea.

Central City, now joined to the towns of Black Hawk and Nevada, making a continuous line of settlement 3 miles long, with a gradual ascent of 1000 feet, is the chief town of the county, and is surrounded on all sides by rich mineral veins. It is the grand centre for gold and silver, where hundreds of miners are digging day and night, sending forth ores pronounced at the Paris Exposition "unrivalled" and "unequalled." It has now a population bordering on 10,000, with fine brick blocks of houses, equal to eastern towns. Two weekly and two daily papers. Foundries, machine-shops, Templar, Masonic, and Odd Fellows societies, miners' and mechanics' institutes, hotels, fine churches, elegant private residences, schools, theatres, with all the surrounding of a well regulated city; and quartz-mills, reduction-works, and mining machinery in all directions. The Miners and Mechanics' Institute, as a depository and centre of mining, mechanical, literary, and scientific research, has more than realised the expectations of its founders. As a cabinet for the exhibition and preservation of all that is valuable, interesting, and wonderful in the varied productions and resources of the sierras and parks of our country, mineral, geological, and fossil, it is fast increasing in importance and variety. Colorado, admitted to be the richest mineral country in the world, nowhere else can be found and collected, so readily preserved, and exhibited so successfully, her richest stores and treasures. The Institute has a well-selected library, and on their files are found the best current periodicals and magazines from all parts of the world. During the year 1867 the three banks of Central City have shipped from thence $1,200,000 of gold, the six leading companies crushed 20,000 tons of rock, which yielded $803,000 gold, leaving 6000 tons of tailings, worth $20 and $30 the ton, and a few hundred tons of choice ores, first-class, saved for smelting. These companies run on an average 170 stamps, and the result averages about ½ ton to a stamp. At this time there are running in Gilpin county sixty-three mills, containing 1210 stamps, 26 other mills, and 181 engines, having an aggregate of 4500-horse power. The cost of mining at the present day is high, owing to the high price of labour, which is twice as high as it should be, and necessarily will as emigration falls in decrease. The cost of living is very moderate in proportion, and abundant and excellent. There is no finer or better beef in the world than the prairie-fed wild buffalo, and venison and native grouse abound. For fuel the parks are one vast coal field, conterminous with iron and copper.

R. L.

ST. JOHN DEL REY MINING COMPANY.

SIR,—I am one of those unfortunate wights who, from some cause or other utterly unknown to myself, believe I am possessed of a larger share of that uncommon commodity—common sense—than is usually allotted to my fellows, and hence I suppose it is that I am perpetually doing something which results in sometimes a heavy loss, "like unto which" none are incurred by those who, lucky for themselves, are endowed with less speculative wisdom. Added to this, my unhappy gift, I place a confiding belief—which, by the way, is equally unfortunate for me—in the veracity of those "who are placed in authority over us;" and, therefore, as may easily be imagined, I do not for one moment expect that when a Spartan calls "a spade a spade" any reference can possibly be made to the rack of impecuniosity upon which my uncontrollable proclivities have placed me during the past six months.

As may be inferred from the above allusion to my instinctive characteristics, I, as a shareholder in the St. John del Rey Mining Company, attended the last general meeting, when, in common with my co-shareholders, I was delighted to be informed of the encouraging fact that there was not only no ground whatever for the disparaging statements that had been so freely circulated as to a monthly loss being incurred in conducting the general operations at the mine—that is, of course, apart from the outlay necessary in sinking the proposed vertical shafts—but that "the attainable income would meet the expenditure." Immediately I heard this statement made by the Chairman, upon the authority of Mr. Gordon, the manager at the mine, I in "hot haste" repaired to my broker to instruct him to purchase, without delay, an equal number of shares to those I already held; and fearing that some of my less perceptive co-shareholders should see the importance of such a statement, coming, as it did, from the chair, I informed my broker not to be particular as to the price he paid for my additional shares, as my object was to secure them without delay, which was done to my heart's content at 20*l.* per share, *ex* the commission. I was the more satisfied with my operation when I read in the Journal of the following week "that there is every prospect as soon as the workings at the shallow levels, where ore has been left in former years, have been fully resumed, *the cost will be more than covered by the produce of the gold from the ore raised from the several points now being out at the shallow levels.*" My disappointment, however, can be more easily imagined than described when I state that, with the exception of one month, when the returns were equivalent to the costs, the loss has not only been large but progressive, amounting to something like 2000*l.* per month, although, be it distinctly understood, no step has yet been taken, and, therefore, no outlay incurred, in connection with the sinking of the vertical shafts. Besides all this, I find Mr. Gordon in his last advices states "that the stulls in the Bahu Mine were giving about the same quantity of stone as heretofore, *but the quality is not so good*"—a statement which at once dissipated my hopes as to the quality of "the ore left in former years," and I need hardly say that I am not surprised to find that the shares, which cost me 20*l.* (*ex* commission), are now flat at 17*l.* 10*s.*

I have troubled you, Sir, with this letter in order that those who, like myself, "believe and act," should pause ere they implicitly confide.

A SHAREHOLDER.

CORNISH CLAY, AND TIN HILL.

SIR,—In reply to the remarks of "A Shareholder," in last week's Journal, I quite agree with him that both these concerns are first-class properties; but until they are brought into a self-supporting state they cannot be worked in the vigorous way he wishes without adequate funds. There is something more than good management wanted to make a mine—good courses of mineral; and in these works I have opened them out as well as the company's means, and the difficulties we have had to contend with, would admit. The clay works are progressing satisfactorily. We have a finished stock on hand ready to supply our customers with as they may require; but as their orders do not come in as fast as we can produce bleaching clay, I am seeking other channels for its sale, and think I have an opening for a regular trade on a large scale. On the sale of a few cargoes, the washings can be increased, and good profits made. It is useless shipping it to agents, and in two or three months have an offer for it at half price. It will only be shipped on *bona fide* orders.

At TIN HILL, there was but little work done during the long drought. This has been explained to the principal shareholders, but it seems a difficult task now, as ever, to please everyone. One requires a more vigorous working, whilst another thinks, when there was not water to drive the stamps, that I should have discharged the hands, and not kept them on breaking tinstuff, and getting into debt, as if I were to know we were not to have a solitary shower of rain for so many months; whereas, in my opinion, all the work that could be broken should have been, and piled for stamping.

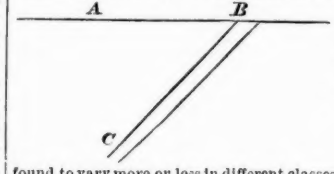
I should be glad of the assistance of "A Shareholder" in helping me to extend the workings, as it is what I am most anxious to do; but as both companies have been aided considerably by ourselves, I think it now advisable to seek the co-operation of others interested in the plan suggested to them. I can then soon show the position I have brought the mine into by the regular returns of tin I shall be able to make, which will prove satisfactory to all concerned, but to no one more than myself. W. H. WILLCOCK.

The Royal School of Mines, Jermyn Street.

MR. WARINGTON SMYTH'S LECTURES.

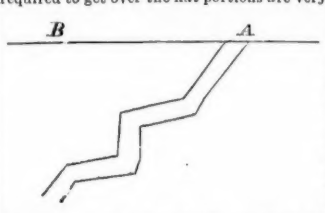
[FROM NOTES BY OUR OWN REPORTER.]

LECTURE III.—Following the subject of the last lecture, in which Mr. SMYTH reminded his audience he had treated of those changes in the character of a seam or lode, which, although at first a mineral deposit of value, gradually became interposed with other materials—adulterated, as it were—until gradually it lessened in value, and, perhaps, eventually worthless. These changes arose frequently from such slight differences of physical condition as to render the deterioration very gradual; on the other hand, it was possible for the miner to begin, as it were, at the other end—to leave first the deteriorative portion of the seam, and to work on towards the better and richer portion. He had also shown that, although there was sometimes a larger percentage of impurities in workable strata (such as iron pyrites in coal), yet that it was important to work out these deteriorated deposits, or others which might be of high percentage, on account of the enormous value which sometimes attached to their extensive area, a most remarkable instance of which, as he had mentioned, was that of the iron ores of the Cleveland district of Yorkshire. He might have described similar deposits of iron ores in France corresponding more or less with our oolitic districts in Northamptonshire and elsewhere. He had also mentioned besides iron ore other metals occurring in certain beds, disseminated regularly through them, as in the thin cupriferous black slate of certain districts in North Germany, the Permian copper-slate of Mansfeld. Deposits of the same kind had been discovered in other districts, as the cupreous strata of the remarkable region of Perm, referred to by Sir Roderick Murchison in his valuable work on the geology of Russia. Something of the kind occurred at Commern, near Cologne, on the Rhine, in which certain beds of Trias, or New Red Sandstone, contained specks and grains of galena so plentifully that it was worth while to work the beds on a large scale. These spotted ores were known in Germany by the name of Knotenerz, and are now smelted in vast quantities. It was necessary for miners to be very careful in dealing with ores thus apparently stratified, inasmuch as, although the beds were developed over a large area, the valuable portions were sometimes limited to a particular run of, perhaps, only a few feet in width, and more or less to particular strata. Cupreous deposits of analogous character were found in the New Red Sandstone of several localities in Cheshire. In dealing with deposits of this kind it was obvious that if they were spread equally over the whole extent of the stratum the valuation of the whole of a sett would be simple enough, but that was not always the case; and it was, therefore, of the utmost importance that the miner should endeavour to distinguish whether these valuable impregnations were disseminated through the whole bed, or whether they could be followed and found only in some limited portions of it. One or two points, then, might be referred to with profit—such as the aspect the strata put on where they have been scooped out on the surface by rains, or weather, or intersected, and thus interfered with by faults. To illustrate these points the lecturer produced a number of most compendious models, constructed some years ago by Mr. Sopwith, which showed clearly every kind of change which the beds underwent from their first deposit in a horizontal position, and exhibited a thorough knowledge of the freaks which Nature seemed to have played with them in heaving, tilting, and twisting them in every conceivable and unexpected way. Thus, a deep valley might be hollowed out, leaving a hill on either side, and then the outcrop of the different beds would present a series of curves which might render it difficult to follow any particular one. When faults occurred this identification would be more complicated and more difficult. If they took one fault by itself it would be easy to see in the model the character of the movement which had taken place; but in walking over the ground for the purpose of a survey they would find a particular bed, perhaps of a valuable kind, outcropping in two places not in the same plane, and might, therefore, conclude there were two beds. This, however, would in such cases only be the same bed heaved and apparently repeated by the plane of dislocation, and it, therefore, required great care in making reports based upon the appearances of any particular bed at the outcrop. This was by no means a fanciful case, but one which frequently occurred, and there had now and again been reports placed before shareholders and the public where a single stratified bed, like a seam of coal, had been represented as double from appearances of this kind. I pass now (said Mr. Smyth) to another class of deposits—namely, lodes or mineral veins, called by the French "filons," and by the Germans "gänge." Veins have often been described, and are even now sometimes spoken of in a most fanciful way, as if they were like the veins of a human body, referrable to one central heart or centre, or as the branches of a tree, which, if followed, would lead to and unite in a vast repository, corresponding to the trunk. These notions have often been held out with a dangerous corollary attached to them—that if a true branch or vein be hit upon at the surface, and followed down into the bowels of the earth, the great trunk would be reached sooner or later. The danger of this error will become obvious as we proceed with our subject. Pryce, whose book I mentioned in my last lecture as worthy of attention, was, with Werner, one of the first who recognised the fact that veins were originally fissures, of various and varying dimensions, and reaching to depths so great that it is doubtful whether we have as yet ever reached the bottom of any one. A lode is, in fact, the mineral matter filling a space between the two walls or sides of the fissure, those walls being more or less parallel. I say more or less in a rough way, because the parallelism will be found in many cases to be exceedingly capricious, the sides often approaching each other very nearly, or bellying out to considerable breadths. The material found between these walls is extremely various, but the student ought to be able to recognise a piece of a lode when he sees it. Lodes occur in certain districts in considerable numbers, and, generally speaking, in groups, which follow the same direction. If we take a series, such as those worked in the Carn Brea Mine [of which a large map was exhibited], it looks, at the first glance, like the Cretan labyrinth, from which you would be at a loss how to get out; but if we confine our attention to one lode we shall see that it has a definite and distinct outline, dipping at a greater or less angle from the horizon towards the unknown depths below. Of the variety of material with which these lodes are filled much is valueless, but it is from them that the metallic minerals are, for the most part, obtained. The first thing that strikes us in considering their characteristics is that we may get a lode or many lodes, and yet may be insecure of having anything like a good mine, because they are most capricious in their qualities as to yielding metallic mineral or not, and the metal, although present, may form such a small proportion to the stony matrix or refuse as to make the working profitless. Veins sometimes are extremely minute, but, although they may be only mere strings, like those of quartz, they may sometimes contain metallic ores of value, and thus be well worth working. In these cases, however, it depends upon the intrinsic value of the metals they contain. Although, technically, they are called strings and branches, they are not at all like the branches of trees, being, in fact, planes which cut through the rock. They are also called "ribs" or "skins" in Derbyshire when they occupy the place of larger veins, or, as they sometimes do, run through the larger veins themselves. The miners have many local phrases, which it is well to be acquainted with. Thus, the direction of a vein is called its "course" or "strike," and it is said to "carry its head" this way or that way, according to the points of the compass—as, for instance, they might say a vein carried its head north or south of east. With regard to the "underlay," or "dip," or inclination of a vein, that is generally described by the angle it forms with the horizontal plane. Thus, the vein, *C B*, is said to dip or trade at a certain angle with reference to the horizontal line, *A B*, at surface; and drawing a vertical line from the surface to the lode—from *C* to *A*—and, measuring the distance from *A* to *B*, we say that the lode deviates from the vertical of a given length by a certain amount of feet.



The "strike" and the "dip" are found to vary more or less in different classes of lodes, and especially when there is much irregularity in the "country." If the "dip" or "underlie" be far from regular it leads to important results in the practical working. In some districts it may be observed that if the rocks are tolerably uniform the strike of the lode will be regular, but in districts where the rocks are variable in character, and crystalline masses interfere with and distort the strata, the lodes have a strong tendency to deviate from anything like regularity of course, and it is proved that where that happens they are apt to deteriorate in metallic value as soon as they swerve much from their true point. Suppose we have a lode coursing a few degrees north of east (which is the most common direction of the lodes all over the world), and it turns away for as many degrees to the south of east, it will often at once become poor. The miner in such a case ought not, however, to give it up, even if it lost every particle of metal, because it has been also proved that if it comes back to its old course it will probably be as rich and favourable as it was before. I do not propose to go into the theories or hypotheses prepared to explain these phenomena, although they would not be far to seek in many instances; but if the circumstances are examined you will be apt to find that as long as the strike was uniform the lode was running in one class of rock, and changed its course when it came to another variety. That, in my opinion, is often the true cause of the lode becoming less orey and valuable in such cases. Furthermore, we know that in some classes of rock the walls of an original fissure would come together so quickly that there would be no room left for the deposition of ore. This has been proved in many cases, and then as it passes on and opens out again it puts on the same appearances as before. These are circumstances in which the miner, having to toil for a time under adverse conditions, is bound to keep up a sanguine temperament. (Cheers.)

I must now say a few words upon the great changes of direction to which the lode is subject as it penetrates below the surface of the ground. Supposing a lode be found so dip with regularity for some distance from the surface, it may happen that after a time it will go away at a lower angle as compared with the horizontal line. Then it may change again to an almost vertical direction, and after awhile go off again at another angle, and so on. This is a point of importance, because after deviating from the higher angle, and becoming, as it were, flatter in position, a lode will frequently be found to be more or less impoverished, and perhaps die away for a space altogether. For instance, in the remarkable district adjoining Alston Moor, in a mine belonging to Mr. Beaumont, M.P., there is a productive lode, called "Henry's Vein," in many places 8 ft. to 14 ft. in breadth from side to side. After yielding much riches in a certain part, where it was nearly vertical, it ran away very flat, and in that portion there was no ore at all, but on getting again into favourable ground it reassumed its steeper dip, opened out to its former size, and became again productive. When this slipping of the lode is repeated the step arrangement, as it were, is very troublesome, and if all the pumping and other mechanical arrangements are placed at a shaft sunk in the top of the lode the additional friction required to get over the flat portions are very destructive to economy. Suppose the pumping apparatus to be put at *A*, and the shaft follows the lode, the mechanical difficulties must, of necessity, be great, and it may be a question whether it would not be worth while to sink another shaft at *B*. This, however, would be a serious matter, as, after all the expenditure of money and time which a fresh sinking would cost, the lode might soon become impoverished and worthless. Considerations like these induce the mine owners to put up with a great amount of inconvenience. In a mine lately examined by the lecturer the engine-shaft was sunk on the lode—at first perpendicular for some fathoms, then dipped off in one and then in the other direction, and was so irregular or winding that seen in plan it took a shape more like the letter S than anything else. It is, however, unusual for the underlay or dip to vary more than 45° from the perpendicular, and, as a general rule, it may be said that from 60° to 80° from the horizontal is most prevalent. Anything flatter than this is unusual, but some districts produce flat lodes. St. Agnes, in Cornwall, is a district of this kind, where very productive tin lodes are found at an angle of about 30° to 40°, and so can actually be walked up and down. In Saxony, too, near Schneeberg, there are some extremely flat lodes, termed *Schneeberde-gänge*, which were at one time very productive. The two opposite bounding planes of veins are called walls or cheeks, and if they run east and west, one is called the north wall and the other the south wall. In some parts of England the latter is called the sun cheek, and its opposite the north cheek. Sometimes they are called the foot-wall and the hanging-wall, or ledger and hanger. With regard to the distance between the walls, or, in other words, the thickness, there are remarkable instances both of large and small veins, and I would strongly recommend to your attention the cases which run round the upper gallery of the Museum, in which specimens are collected with a special view to the illustration of the character of lodes. They begin with strings composed of one substance, and then as you go further round to the right other structures are illustrated. In the veins of Transylvania gold is associated with tellurium, and, although very thin, they are worked with great advantage. In our own tin mines the vein often consists of a valueless substance, but so intersected with thin fibres or strings of tin ore that, in spite of their smallness, they are worth working. In the district of St. Agnes, in the Royal Polberro Mine, so called because it was visited by the Prince of Wales, vast numbers of small strings of oxide of tin intersect the rock so thickly that the vein is worked by cutting through it, and taking it away bodily to the stamps. The poor men's mines in Derbyshire deal with strings of this character. They are worked by the farmers individually, who obtain in an inexpensive way as much metal from these small strings as will pay them for their labour, but which would scarcely pay to work in any other way. There are, however, silver mines in Scotland, where small veins, not more than 2 in. in breadth, are profitably worked at a depth of 250 fathoms. The average size of veins in England, however, may be put at from 2 ft. to 6 ft. between wall and wall. There are innumerable instances of the largest veins dwindling down to an inch in thickness. A remarkable case of this sort of thing is to be found in the Great Laxey Mines, in the Isle of Man, where the vein, long profitably worked at a breadth of from 8 ft. to 10 ft., rapidly diminished in thickness to from half an inch to an inch and a-half, and at last it was scarcely traceable. Pursuing it, however, in this way for a time, it opened out again to its former dimensions. One of the most remarkable cases for size, however, is that of Beckwith's Mine, in Devonshire, where the lode is 40 feet wide, filled in with broken killas, intermingled with lead ore in considerable quantities. The Great Devon Consols is another remarkable mine. It has yielded its owners a million of profit in nineteen years. Large portions of the vein are from 20 ft. to 30 ft., and at one place it is 50 ft. in breadth, and yet within a few yards it is pinched up to a width of not more than 6 in., and passes into dead quartz. These phenomena have also another side—they show when improvement may be expected.



If we look abroad for a moment we shall see some remarkable instances of large veins. Amongst the most noticeable are those of the mines of Schemnitz, in Hungary, where the principal lode is from 10 ft. to 60 ft. wide, and at one place even as much as 120 ft. Then, in Mexico, in the Guanaxuato Mine, the mother lode (which, however, might be taken for three lodes, as it presents itself in three branches) is, taken together, 137 feet in breadth. This occurrence of parallel veins close to each other often occurs in this country on a smaller scale. Several well-defined veins are sometimes met with, the intermediate spaces so filled with strings as to almost warrant their description as one large vein. I might also mention two or three other large lodes in the region of the Hartz, and it is remarkable that all the lodes in the west of the Brocken are of large size, while those on the south, which are silvery and valuable, are much smaller—indeed, it may be taken as a general rule that wherever we have rich silvery lodes we must expect them to be smaller than those which produce less valuable metals. In Saxony and Bohemia some of the lodes are worked to a great depth, although they are but small, and the same thing happens in Spain. Having said so much about their thickness, we naturally come to the materials of which veins are composed. I have mentioned already that the material is by no means always what we could wish, and that, although some few may have a large proportion of metallic substances, they generally contain a large percentage of non-metallic minerals, which have fallen into the fissures from the adjacent

masses of granite, slate, or other rocks. Generally speaking, the whole of the vein-stuff, or matrix, is of the mixed character I have described; but it, nevertheless, in particular districts, frequently happens that the miners come upon a mass of rock from the country without the least appearance of metallic impregnation upon it in the middle of the vein, and this they call horsey ground, and the narrower portion of the mass the "tail of the horse." In these cases, it is usual to say the lode has taken the horse, and it is a question whether they shall work round the intruded mass or remove it, as the vein generally comes together again beyond it.

The lecturer concluded by giving a description of lodes which were filled with brecciated materials, always a matter of scientific interest with reference to the pre-existing rocks, and by exhorting the students to devote their best attention to the study of the structure of veins and beds.

LECTURE IV.—Having examined some of the most striking points which meet the eye in respect to veins, and which would be presented to a visitor to the mines, and shown that the nature of the structure of those veins, and the surrounding country, present to us most important facts, to which we are obliged to refer if we would form satisfactory conclusions as to the prospects of mining in particular places. Thus, in commencing a mine we should be satisfied from lumps of the vein-stone, or from other indications, as to the character of the lode, and too great precaution in judging by appearances cannot be observed. For the present, however, I am only speaking of appearances connected with the structure of the veins, when its true character is already known and developed by actual workings. There are always a great number of substances accumulated together in a mine, and without going into the subject of the association of minerals, which belongs more to the province of geology, I may say that, while certain minerals are grouped together in small numbers in certain veins, other classes of veins are remarkable for the great number of minerals associated together within them, and amongst these, particularly, are the tin veins. These offer to us a large sphere for examination of the highest usefulness and interest, if we engage in the examination of new ground, or in the workings of veins which have already been opened to some extent. In my last lecture I dealt with veins under many simple aspects, but without going into the subject theoretically in any way. I pointed out that actual appearances within the mine never show the distinctness with which their outlines are drawn in diagrams, maps, and plans, or in the mine with the individuality of specimens selected for inspection. Thus, in some of the Welsh mines the vein-stone dies away, until the miners say there is no wall to be seen. When the vein-stone is enclosed in a mass of granite it is difficult often to decide which is the vein and which is the country, and especially if the lode chances to be poor. It, therefore, happens frequently that the miners consider they have lost the lode, and after working for a time in doubt, hoping to find it, they sometimes give up that particular working, and, perhaps, the entire mine. In some places, as in the Wicklow lead mines, one wall is well developed, and the other so ill-defined as to make it almost impossible to fix on its line. This is the case also in many of the tin mines of Cornwall. A knowledge of the materials, and associations of those materials, within lodes generally will, therefore, be most useful in such cases, and I will next say a word or two on the importance of looking at the structure of the vein. I have pointed out that there is, in some cases, what has been well called a brecciated structure, in which the material is loose and broken; but in some of these there is often a sort of cement formed of other material, which holds the mass together, and, indeed, is often as hard as the solid rock itself. In the cases upstairs are many remarkable specimens in large fragments from the country by the side of veins, held together by fluor-spar, quartz, sulphate of baryta, and so on. At other times these fragments will obviously consist of the pre-existing parts of the lode itself, held together by metallic substances of high value, such as galena, carbonate of copper, zinc blende, and, in most cases of all, by pyrites.

In a well-known mine in Cornwall the vein held large quantities of the rounded stones of the country, cemented together by a highly crystallised oxide of tin; but it is not uniformly the case that the binding substance is the material of principal value, although that is the case when they get galena, carbonate of copper, or oxide of tin. The instances in which angular fragments, evidently broken by great mechanical force, exist without a cementing substance are, however, but few. Cases exist in one or two mines in Cornwall, and at Esgairlly, in Carmarthenshire, where, on the vein being opened, the fragments fell asunder by their own weight, and galena being absent the vein became valueless. In some parts of Henry's Vein, in Mr. Beaumont's mines, the same thing is observable. Many veins are what is called banded—that is, the materials of which they are composed are in layers or bands, and connected with this sort of structure are what may be cavernous, or, as the miners say, "booty" lodes. These cases go to prove that lodes were originally openings which became gradually filled up by new material. Quartz, fluor-spar, then galena, then some kind of calcareous spar, are found filling up all but a small cavity. It is in these boots that those very beautiful specimens of crystalline structures of various kinds which adorn the cabinets of mineralogists are found. Sometimes these caverns are many feet in height and length, and often turn out greatly to the advantage of the working miner, who, having taken his work at so much per fathom, finds, it may be, 5 or 6 fms. opened out for him by Nature; and it is of advantage to the proprietor also, as the vein is extremely apt to be good and rich in the neighbourhood of these caverns. With reference to this there are one or two points which border on the theory of mineral veins. I do not wish to enter, however interesting it may be, on the various suggestions that have been made as to the mode by which these veins have been filled, but it is important that the mining engineer should study the structure of veins, with a view to hitting upon the right theory, as that may greatly affect the success or otherwise of his operations. When we get these brecciated veins, of one thing there can be no doubt, which is that the materials have been broken by mechanical action or power, and that the pieces have been cemented together by chemical means. I have seen cases myself in which the pieces have been broken small by the closer approximation of the two walls to each other, but these "nips," as they are called, do not extend generally to any great length, and are generally regarded as local phenomena, only affecting that particular part of the lode. With reference to the banded layers I have mentioned, which lie more or less parallel to the walls of the lode, it is found that the more valuable may be either the first, the last, or the intermediate, and this is a matter not to be regarded with indifference. In one of the Irish mines, that of Barristown, the more valuable bands are those of silver and lead, which are found crystallised upon the others. Now, supposing the lode being open, and the silver and lead come downwards, the natural result will be that the deeper we go the smaller and narrower will the valuable materials become, until they cease altogether. If, on the contrary, the veins be filled from below, a theory held by some eminent men, then the miner coming upon a deposit—say, of galena—may expect to find it increase in size as he descends lower and lower. These points will be understood clearly by drawing a very exaggerated representation of a lode.

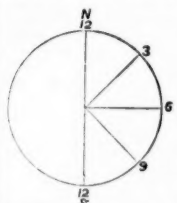
Another point connected with structure is of the highest importance, but it is, unfortunately, a point on which there is but little definite information as yet attainable, and that is *distribution*. Mr. Jordan's models and drawings of the Dolcoath Mines in the Museum show, with a great degree of clearness, the circumstances under which distribution there has taken place. Taking, however, a section of another large mine, that of Carn Brea, in Cornwall (exhibited on the wall) what do we see? That until far below the adit level there is no orey ground at all, and that throughout the whole of those very extensive workings great masses have been extracted here and there, but between them considerable distances occur without any ore at all. Many lodes, as I have already mentioned, vary from the tenth of an inch to 8 ft. or more in thickness, and also in character the variation is as great. In fact, the lodes are extremely capricious, and while mere strings will be found to contain valuable metals, and in other places a vein may contain all sorts of metallic substances, sometimes large masses of copper ore, and sometimes pyrites, so rich as to be capable of yielding in a small space an enormous amount of profit, but a very large proportion of the workings in an extensive mine run through dead ground. There are old established mines where the extent of dead ground driven through is surprising. That of the Fowey Consols, an old mine near Tavistock, is a remarkable example. In it there are spaces where the lode is dead for 40, 50, 60, or even 80 fathoms, through which the miners have driven at a cost, probably, of from 8*l.* to 10*l.* per fathom, and then have had their courage and perseverance rewarded by coming into productive parts again. This is unavoidable. Suppose a shaft to be sunk, it often happens that on one side the miners will get into rich productive ground at once, while on the other side of the shaft the ground will be poor and unpromising, but the very richness of the good ground is the best of reasons for exploring the poor ground. The drawing on the wall shows many instances of this kind. In one place (pointing it out on the plan) a level goes 50 fathoms without coming to any ore at all, and then it gets into a vast course of ore, productive of an amazing amount of riches. That good result, however, might not have happened, and the question naturally suggests itself, can no rule be laid down under which these courses of ore may be predicated with certainty! No satisfactory answer can be given; each case must be taken on its own circumstances, and the miners have to form their judgment by the nature of the outside rock, and the character of the vein within it. To a certain extent, however, when ground has been explored, and the country is found to be orey, the chances are that a certain proportion of the workings are likely to be profitable, and to be carried out to a successful issue. Another difficulty, however, should be mentioned. These courses of ore are sometimes extremely short (when they are said by the miners to be "bunches"), beyond which the vein comes into poverty again. Occasionally deposits of this sort occur, and continue for some distances, and in which case they are called by the miners "pipes," or "shoots" of ore, and to deal with them successfully it will be important for the miner to discover whether their prolongation is greater in depth than in length. Miners have strong prejudices, and they believe that deposits of this kind have a tendency to be more continuous in the vertical than in the horizontal direction. I could overload you with cases of this sort, which have proved grievously disappointing, but if you find a course of ore deepening in this way, or a second course coming into it, your chances are very good. I point this out because in the minds of some mine managers there is a want of faith in the courses of ore met with in the depth, and the moment such veins begin to get poor they are afraid to venture on. Wherever there are indications of duplicate courses of ore it is a great pity that a thorough trial should not be made, and the exploratory levels pushed to a considerable distance. Indeed, in all good mining exploration ought to go on of the poorer parts of the mine simultaneously with the working of the richer parts. Another practical consideration arises out of the selling price of the metals worked. Thus, when the price is at so much it may be just remunerative, but if the price should fall it would cease to be so, and the works must be suspended until an improvement takes place. In speaking about the richness or poverty of a mine, it must be remembered that the terms are comparative, and that between the best deposits and utter poverty there are many gradations, and that although the best class of metals have disappeared, others of less value may be obtained. Again, a good result may be obtained while the workings are at a reasonable depth, but the greater expense of working lower down may eat up all the profit.

We have, therefore, to consider, in managing a mine, the relations of the metals to be obtained in reference to all these circumstances, whether they come together, or, comparatively speaking, are distributed over considerable distances. A large proportion of our mines contain what is called "dradgy" ore—that is to say, worthless materials are so mixed up with the metallic portion that it has to be sent to the crushers and ground into small sizes, and then separated, or it may be necessary to reduce it almost to a powder. It is often too poor to yield anything like a remuneration, but still, if ore be in the vein at all, much will depend on local circumstances, the cost of labour, of water-power, and other things.

Another question connected with *structure* illustrates the difficulty of dealing with veins of large size. It may occur in such a vein that in one part of the mine the lode may be productive of valuable minerals at one side, or in the middle, while in another part of the mine it may be productive in another part of the same lode; hence the necessity of making frequent cross-cuts at right angles. It is easier, however, to say than to do this, such works often being very difficult, and often occupying much time and expense. By way of an example, I may mention a case which occurred some years ago, in which the lode, being from 42 feet from side to side, it required nine months to cut across it, so hard was the material. Again, one portion of a lode may yield copper, while another portion of the same lode will yield tin ore; but this can only be found out by a series of cross-cuts, and it is these circumstances which frequently render large lodes less profitable than where the size of the lode enables the miner to carry the whole in the working by one level or drift. Having made ourselves acquainted with the structure of veins, we shall naturally wish to know how far they are worth following—that is, supposing at a given depth at a given point in a mine we have opened out a lode, we want to know its extent horizontally through the country. This is important, because the surface may belong to different proprietors, and it is a question which can only be met by a careful examination of the ground. The horizontal termination of the lodes will be determined by one of several classes of causes. It will either be found to be bounded by another kind of rock; or it will split up into a series of veins too poor to follow; or, as the miners say, it will die out of the country—that is, dwindle away until it is no longer distinguishable from the rocks which surround it. This question of horizontal extent was one of intense interest some little time ago with respect to the Devon Great Consols lode, near the River Tamar. From one portion of that lode copper to the value of more than 2,000,000*l.* sterling was obtained. At one point very near the river it was cut off altogether by what is called a cross-course. By that its position was raised 10 fathoms, it was then found to go on, and to be as productive of riches as before, until, at last, it passed off within a few feet into a dense mass of unpromising quartz, when it was lost altogether. Very naturally everybody in that neighbourhood was extremely anxious to get the continuation of that lode. Large sums were given for adjacent rights, innumerable searches have been made, but nothing has been discovered. Everybody who has a piece of land in that direction thinks he has a piece of the Devon Great Consols, and some indications of a lode have been discovered. Indeed, it is possible that the same line of fissure may extend for great distances without the same results as to the nature of its filling. When a lode comes to end in thin strings, which are not worth working, what the miners call "splicing" sometimes takes place; cross-cuts are made, and it is found that where one lode left off another begins.

The length of veins across the country, like everything connected with them, is extremely variable. At Shemnitz, in Hungary, large veins are traceable for miles. In Cornwall some veins have been traced for long distances; and in certain tracts of the country from a mile to a mile and a-half, up to three miles, is the extent to which they are traceable in that country. In Derbyshire veins are traceable for four miles, although, generally speaking, they are small; in Flintshire, from one and a-half to three miles; while in Cardiganshire one great lode, the Combwr, has been traced for nine miles. In California the lodes are traced for 20 or 30 miles. Where one lode is traceable over a great length of ground, they are called, in the West of England, the champion or master lodes, while the smaller ones are said to be branch lodes, although they are not, in any sense, branches of the larger lodes, but run parallel to them.

There are many interesting points connected with the direction of lodes. Veins have a tendency to run in a particular direction, so much so that they are then called right running veins, while others go by different names. If you examine the map of Cornwall and Devon you will see that the greater part of the veins run east and west. When, however, the miners refer the direction of the lodes to the points of the compass they usually go by the magnetic north, which, as you are aware, is 20° west of the true north. In other districts they divide the dial of the compass into twenty-four hours, and speak of the lodes as running from such to such an hour. In the St. Austell district the lodes "carry their heads" to the south-east, as the miners there say, and what are called "caunter" veins run in the other direction. In the St. Just district a series of other lodes cross the right running veins at right angles, being nearly north and south. These are often called cross-courses or cross veins, and they are sometimes found to yield no minerals of any value—nothing, in fact, but a soft clayey rock, when they are termed slides or clay-courses. In other cases these cross-courses are filled in with quartz. They often present a highly crystalline and regular banded structure, the bands being sometimes divided from one another by beautiful thin ferruginous plates.



The cross-courses yield lead ore, and also cobalt and nickel, the lead ore being very rich in silver. The East Wheal Rose, one of the richest mines in Europe, produced a valuable silvery lead ore of this kind. The Wheal Mary Ann is on a vein of the same kind. Some of the Tamar Mines are remarkable, the cross-courses producing 70 ozs. of silver to a ton of lead. In the Lostwithiel district the cross-courses yield valuable brown hematite iron. The east and west lodes are uniformly productive of tin and copper, and the direction has something to do with the nature of the produce, because, with some exceptions, that is the general rule which obtains all over the world. The Isle of Man, however, furnishes a remarkable exception, as the east and west lodes and north and south lodes are both highly productive of silvery-lead ores; and so at Siegen, in Prussia, the lodes which produce lead ores and magnificent hematite iron ores run, some east and west and some north and south. They have, however, a different character; the north and south lodes are irregular as regards their course, and some attain a large size, while the east and west veins are more regular, and smaller. These are, however, but local differences. In conclusion, I would strongly urge upon you to study the numerous specimens in the Museum, which show the structures and different characters of the veins, and to make yourselves acquainted with the direction of the lodes as productive of different classes of minerals.

GEOLOGICAL SOCIETY OF LONDON.

Nov. 11: Prof. T. H. HUXLEY, LL.D., F.R.S. (President), in the chair.

William Augustus Edmond Usher, Geological Survey of Great Britain; Rev. Robert Dixon, M.A., Nottingham; William Woodman, the Deanery, Great Malvern; and F. R. Mallet, Geological Survey of India, were elected Fellows.

The following communications were read:—

1.—"Note comparing the Geological Structure of North-Western Siberia with that of Russia in Europe," by Sir R. I. Murchison, Bart., K.C.B., G.C.St.S., F.R.S., V.P.G.S., &c. Count A. von Keyserling had communicated to the author the following facts:—The districts between the rivers Lena and Jenissei is occupied by Upper Silurian rocks of the same type as those found in the region of Petchora, and by Carboniferous rocks containing seams of coal. The chief Secondary deposits are of Oolitic or Liassic age, and agree with those of the Petchora region, which is the next adjacent tract on the west to the Siberian region in question. Similar rocks are found in Spitzbergen. The banks of the Jenissei are covered with post-pliocene accumulations similar to those found near Archangel. It is thus seen that the vast, slightly undulating, and to a great extent horizontal and unbroken formations, each of which occupies so wide an area in European Russia, are repeated on the eastern side of the Ural Mountains. In this range of mountains only are to be found igneous and erupted rocks. In conclusion, Sir Roderick referred to the discovery of fossiliferous white chalk in parts of the great Sarmatian plain by M. Grewinck.

Sir RODERICK MURCHISON, in explanation of the paper, referred to a geological map of Russia, and gave a general sketch of the bearing of the paper on the previously known geology of that country. He mentioned the discovery by M. Grewinck of beds of brown coal containing amber, and overlying true chalk. The amber in the Baltic had been supposed to have been washed out of beds beneath the sea; but Count Keyserling has suggested that the amber may have been brought down by the rivers from the interior, and deposited in the Baltic. Sir Roderick also called attention to the absence of igneous rocks in Russia to the west of the Ural Mountains.

2.—"On a Section of a Well at Kissingen," by Prof. Sandberger, For. Corr. G.S. Taking as a starting-point a bed of dark-blue limestone, the author proceeded to describe the various beds passed through in sinking the Schönbern well, both as regards their petrological characters and chemical constitution. He considered that this bed is on the same horizon as the uppermost Plattendolomite of the Zechstein formation in the Harz and Thuringia. Above this lie the lowermost beds of the Bunter (containing dolomites), and below it the upper part of the Zechstein formation. Below the Plattendolomite of the Zechstein, from the depth of 1740 feet to 1884 feet, follow the salliferous beds.

Sir R. I. MURCHISON differed from the author, inasmuch as he regarded the whole of the dolomite rocks mentioned as belonging to the Permian system, and not to the Bunter Sandstein proper.

3.—"On the Formation of Deltas; and on the Evidence and Cause of Great Changes in the Sea Level during the Glacial Period," by A. Tylor, F.L.S., F.G.S. The first portion of this paper was devoted to a comparison of the delta-deposits of the Po, Ganges, and Mississippi. The surfaces of these deltas and the alluvial plains above them were compared together; and it was stated that a parabolic curve drawn through the extremities of each river, and through one point in its course, nearly represents its longitudinal section—the greatest deviation being 30 feet in some of the largest deltas. The littoral deposits around Great Britain described by Mr. Godwin Austen were next investigated, to ascertain whether the hypothesis of a fall of 600 feet in the sea level is tenable. The ice-cap at the poles was also alluded to as a probable cause of a great reduction of the sea level during the glacial period. The upper 600 feet of deposits in the Pacific Ocean, made by coral zoophytes, were quoted as cases which might be explained as well by oscillations in the sea level as by the received hypothesis of the subsidence of the sea bottom. Prof. E. Forbes's investigations into the origin of the fauna and flora of the British Isles were next alluded to, and the author considered that the hypothesis of a fall in the sea level better accords with the facts of migration than Forbes's suggestion of changes of the level of the land and sea bottom. The origin and age of the English Channel was discussed at some length; and the occurrence of the crag and fossiliferous gravels and raised beaches near the same level, although of different ages, together with the evidence afforded by the dredging up of fresh-water and littoral shells in the North Sea and English Channel, were adduced in support of the theory of the depression of the sea level. The parabolic curve not only represents the curve of deposition; for the author had measured other sections, and found that the curves of denudation and deposition approximate often to that of the parabola.

The PRESIDENT called attention to the fact that in the neighbourhood of coral reefs the dead corals extend to such a vast depth that, supposing them all to have been formed near the surface, and that surface only lowered by abstraction of water to the poles, the accumulation of ice must have been so great as to become incredible.

Sir CHARLES LYELL had already suggested to Mr. Croll that, assuming the accumulation of ice at the pole depressing the centre of gravity of the earth, the submergence that would have resulted had the quantity of water in the sea remained the same would, to some extent, be counteracted by the reduction in volume consequent on the formation of the ice. With regard to the delta of the Mississippi, the data on which he argued had considerably altered since first he wrote on the subject, inasmuch as recent calculations had doubled the estimated volume of water flowing into the sea, and thus it was capable of producing the same effect in half the previously calculated time. The progress of the delta at any spot was of necessity variable, as the position of the mouth changed. The American engineers had allowed only 40 feet as the depth of the fluviatile deposits, whereas from boring Sir Charles had concluded it to be at least 500 or 600 ft. There was now reason to suppose that it was much more, possibly as much as 1500 feet. This being the case, notwithstanding the amount of work done by the river being doubled, his calculation as to the time required for the formation of the delta might not after all be so excessive.

Mr. PRESTWICH suggested that Mr. Croll's theory only involved a transfer of ice from one Pole to the other, and not a diminution of volume of the sea. The raised beaches round the coast of Britain varied considerably, and were not on one uniform horizon, as they would have been had they resulted from a lowering of the sea. The elevation of the old sea beds during the glacial period were not accounted for by any supposition of the mere alteration in the volume of the sea.

Mr. EVANS pointed out that, the *Cyrena* being a freshwater shell, its position at a certain level was not connected directly with the height of the sea. He doubted the curve of the rivers being in all cases parabolic.

Mr. MALLET had already remarked that the beds of rivers, especially near their sources, appeared to assume curves closely allied to a parabola. He considered that the form was due rather to the elevatory forces than to erosion. He doubted, however, whether they were really parabolic curves, or indeed any other mathematical curve.

Mr. TYLOR replied that he had not found definite evidence as to the extension of corals downwards to such a depth as that mentioned by the President. With regard to oscillation, he had merely treated of the southern part of England. The opening of the Straits of Dover would account for the existence of beaches above the present level, as the tides would have previously risen higher. The parabolic curve was that which, by actual comparison, coincided most closely with the longitudinal section of the banks of the rivers Po, Mississippi, and Ganges.

The following specimens were exhibited:—Specimens of Diamonds, &c., from the Cape of Good Hope, by Prof. Tennant, F.G.S. Specimen of *Calymene cerato-ophthalma*, from the Wenlock Shale of Dudley, by H. Woodward, F.G.S.

On Wednesday, the following communications will be read:—1. On *Dakosaurus*, by J. Wood Mason, F.G.S.—2. On British Fossil Oxen. Part III. Conclusion: *Bos bison*, Pliny, by W. Boyd Dawkins, M.A., F.R.S., F.G.S., &c.—3. On the British Post-glacial Mammalia, by W. Boyd Dawkins, M.A., F.R.S., F.G.S.

FOREIGN MINING AND METALLURGY.

There is no material change to note in the French iron trade. The Railway and Naval Blast-Furnaces, Forges, and Steel Works Company has just held its annual meeting for 1867 and 1868. The report presented by the council of administration stated that the profits for the exercise 1867-8 amounted to 141,024*l.*, showing a decline of 4775*l.* as compared with 1866-7. After deducting the sum applied for redemption purposes, and the 5 per cent. of the profits attributed to the management, the balance for the year was reduced to 132,073*l.*; out of this balance the directors proposed to apply a further sum of 20,593*l.* to the redemption of capital, and to pay a dividend of 2*l.* per share. This dividend will be paid as follows:—1*l.* per share, Nov. 30, 1868; 1*l.* per share May 31, 1869. After providing for these arrangements, a balance of 3480*l.* remains to be carried forward to the credit of 1868-9. The dividend of the company for 1867-8 may be regarded as a remarkable one, when we remember that all industries, and especially metallurgy, have been in a languishing state during the past year. The company benefits, however, from the fact that it has a very large capital engaged, while it enjoys a very high credit, 26,813 of its obligations having been applied for when a recent issue was made of 16,000. In order to continue a progressive course, the company has just carried out, in its Givors Works, the application of the Bessemer process.

The improvement noticed in the state of the Belgian metallurgical markets follows a progressive course, and the improvement has at last extended itself to the products of the blast-furnaces. Thus, refining pig has been dealt in in the Charleroi basin at 2*l.* 13s. per ton; and if in the Liége basin similar products are still negociated at 5d. per ton below the price which we have just indicated, this is only a casual and temporary state of things, because the stock in the second group is more important than in the first. In presence of the revival which has every day manifested itself more seriously in affairs, there is little doubt that an equality of quotations will be soon established. Notwithstanding the abundant supplies of English pig which have been received, the stock of Belgian casting pig now finds a comparatively regular outlet, and there are confident hopes of better times in an early future. Merchants' iron continues in demand, and prices are maintained at the level indicated some time since. The rolling mills producing rails are so busy, that it is difficult for them to accept new orders, to be executed in a short period. We have noticed the progressive improvement which has taken place in prices in connection with contracts for rails concluded by the Belgian rolling mills. We have seen an order for 25,000 tons succeed a first contract for 20,000 tons, with an advance of nearly 10s. per ton. We may now state that the establishment which is charged with the delivery of the 10,000 tons of rails remaining to be furnished for Hungarian railways, over and above the quantity contracted for by the Syndicate, is the Montigny works, which, although not manufacturing rails, has decided, in presence of the advantageous prices now offered, to re-commence its fabrication of rails; the augmentation agreed to in the terms over and above the price figuring in the contract taken by the Syndicate is 8s., and it is well calculated to induce an establishment of the importance of the Montigny works to apply itself again to the manufacture of rails. We find, then, that the price of rails manufactured in Belgium has returned to 2*l.* 12s. per ton—terms which have not prevailed for a long time.

A statement has been issued by the John Cockerill Company (Seraing) showing the general course of its industrial career. It appears that the works have constructed 1687 steam-engines, of from 4 to 600-horse power, for various industrial purposes, 675 locomotives of various forces and systems, 11,650 groups of machinery for the working of mines, the manufacture of metals, the production of sugar, the manufacture of glass, &c. The company's works at Antwerp and St. Petersburg have constructed 174 ships and river steamers, yachts, pilot-boats, dredgers, transports, transatlantic steamers, armour-plated monitors, as well as floating docks for armour-plated frigates of the first rank. The Cockerill Company can deliver annually 80 first-class locomotives, 70 engines of from 4 to 1000-horse power, 1500 groups of mechanical constructions, bridges, turn-tables, &c., to the aggregate weight of 3000 tons, and ships and steamers to the aggregate weight of 5000 tons.

At Havre, Chilian copper, in bars, has made 69*l.* 8s. to 70*l.*; ditto refined, in ingots, 76*l.*; Peruvian mineral, pure standard, 72*l.*; United States (Baltimore), 76*l.* to 80*l.*; ditto Lake Superior, 78*l.* to 84*l.*; Mexican and Plata, in bars, 66*l.*; old yellow copper, 44*l.* to 50*l.*; red ditto, 66*l.* to 68*l.*; bronze, 66*l.* to 72*l.* At Marseilles, Toka for consumption has made 70*l.*; Spanish, 72*l.*; Chilian and refined Peruvian, 78*l.*; rolled red copper for sheathing, 84*l.*; yellow copper, 78*l.* At Paris, Chilian, in bars, has made 70*l.*; ditto, in ingots, 73*l.*; Corocoro minerals, 72*l.* per ton. At Rotterdam, Dronthein has made 50 to 52 fls. At Havre, Banca tin has made 88*l.* to 90*l.*; Straits, 86*l.* to 88*l.*; and Peruvian, 82*l.* to 84*l.* per ton. At Marseilles, Banca has made 106*l.*, and English, in sheets, 102*l.* per ton. At Paris, Banca has made 105*l.*; Straits, 106*l.*; and English, 101*l.* per ton. As regards lead, we may note that at Paris Spanish saumons have made 19*l.*; French, 19*l.* 4s.; English, 19*l.*; and German and Belgian, 19*l.* 4s. per ton. At Havre, Spanish has made 18*l.* 14s. per ton; and lead from other sources, 18*l.* 10s. per ton. At Paris, rough Silesian zinc has made 21*l.*; zinc, from other sources, 20*l.* 12s. to 20*l.* 14s. per ton; and rolled Vieille Montagne zinc, 28*l.* per ton.

Mining Correspondence.

BRITISH MINES.

ABRAHAM CONSOLS.—J. Vivian, Nov. 20: The lode in the 27, east of shaft, is small, but rich for tin. The lode in the rise in back of the 27, west of shaft, is split in three parts, altogether 2½ feet wide; not so good for tin as last week, but producing rich stones of tin.

BRYN GWIOG.—S Harper, Nov. 18: The lode in the 85, west from Bramwell's shaft, continues of much the same character as when last reported on; the ground being a little more favourable for progress. The lode in the 75, west from said shaft, has improved in appearance; now about 1½ ft. wide, composed of soft spar, clay, sand, and fine lumps of lead ore—a very promising lode, and ground easy for progress. The lode in the 85, east and west from Adams's winze, is much the same as last reported on, and opening out tribute ground. We shall push on the 85 east with a full pare of men, in order to communicate with the 85, from Bramwell's shaft; when this is completed, we shall open up a good piece of stoping ground. At Lloyd's shaft, in extending south on the cross-course, we are still meeting with fine lumps of lead ore, embedded in sand and clay. We estimate that we have about 6 or 7 yards further to drive to meet with the east and west run of lead, so much talked of by the former workers. Our tribute pitches continue much the same as for some time past.

BRYNPOSTIG.—J. Kitto, Nov. 19: We have cut a lodge in the 24 fm. level, cut cistern plat, put in cistern, and fixed a new 8-inch lift from the 24 to the 12 fathom level, and are now engaged fixing penthouse, which will be complete and ready to resume the sinking by the end of the present week. The 24 fathom level has been driven 30 fms. east from the engine-shaft, and about the same distance west, and still continues to open out good tribute ground; let to drive by six men each way, at 5*l.* per fm.; we have four tribute pitches at work in the back of this (24 fm.) level—No. 1 let to six men, at 50s. per ton; No. 2 to four men, at 55s. per ton; No. 3 to four men, at 60s. per ton; and No. 4 to five men, at 70s. per ton, and all are doing well. I may here remark that from one of the pitches alone we raised last month, by six men, nearly 20 tons of ore, at 50s. per ton. We have one pitch at work in the back of the 12 fm. level, by two men, at 4*l.* per ton. We commenced to sink a sump below the 12 fm. level, in advance of the 24 end westward, but had to suspend it on account of having so much water, but this I expect will soon be drained by the 24, when the sinking will be resumed. Our raisings for the current month will be 40 tons of lead and several tons of blende, which will leave a good profit on the months' working; and should the prospects continue to improve as of late this quantity will gradually increase.

BWLCH CONSOLS.—R. Northey, Nov. 17: The different bargains underground are going on with the greatest regularity, and with no falling off in value. You will also be glad to know that the dressing department is getting through with the stuff to our satisfaction. I assure you that every exertion is being made in this department while the weather remains open as it is now, and is likely to be according to present appearances. We shall fix a cistern near the second pair of revolving shovels for catching and settling the fine stuff now going to the slime pits. The sand will be drawn off from the cistern when full right on to the smallest round buddle. Of course the slime water will flow over the cistern and be carried by hand to the slime pits as before. The supply of water is sufficient for all purposes throughout the mine.

CAPE CORNWALL.—R. Pryor, F. Hosking, Nov. 17: The ground in the 100 and 70 cross-cuts are just the same as when reported on last week; there is water still issuing from the south side of the 100, east of the engine-shaft, which induces us to think it is coming from the lode.

CAMBORNE VEAN.—N. Clymo, Nov. 19: Grylls's shaft is sinking below the 272, by eight men; the value of the lode is about 3 cwts. of tin to the 100 sacks. The ground is very hard. The 272 is being driven west, by four men, producing tin of similar quality, and worth about 12*l.* per fathom. The winze from the 262 to this level level is holed, and we are now stoping the ground; value about 12*l.* per fathom. In the eastern stopes, in the back of the 262, we have recently cut into the north part of the lode; the stratum is very hard, but is producing some rich stones of tin—we have gone 4 ft. into it, but have found no wall. We have now plenty of water for our stamps, and shall return the tin accumulated during the dry months.

CAPEL BANHAGLOG, OR EAST MID-WALES.—John Kitto, Nov. 19: The lode in the deep adit level, on old Chapel side, still continues of the same favourable character, and producing occasional stones of lead ore; this level has been driven altogether about 40 fathoms, and upwards of 20 fathoms on the course of the lode, which for the whole distance has been unusually regular and well defined, and its general character at the same depth is not surpassed, if equalled, by any lode in the locality. We have commenced to sink the engine-shaft from surface, in order to get it down to the adit level by the time the said level reaches that point, which I think will take us from three to four months from this date; this will not only ventilate the adit, but we then shall be in a position to immediately resume the sinking below for a deeper level, which is very important. The smithy, carpenter's shop, store-room, and office will nearly all be completed if the weather keeps fine by the end of next week, and notwithstanding they are all of a substantial character, and quite equal to the requirements of the mine for years to come, they will be comparatively inexpensive, as we have most of the building materials fortunately on the spot.

CARADON AND PHŒNIX CONSOLS.—W. Johns and Son, J. Kelly, Nov. 16: No. 2 lode in the 60, east of cross-cut, we have intersected a slide, which is letting out a pretty deal of water, and by its influence split up the lode; we shall now have to drive a short distance to get out of this disordered ground, after which we shall cut into the lode. We may as well mention by cutting this water it has drained the 50 for a considerable length. No. 2 lode in the 50, east of cross-cut, is about 2 feet wide, carrying a regular leader of mundic, mixed up with stones of copper ore. In the winze sinking below the 40, on No. 2 lode, the lode is 3 ft. wide, presenting a very promising appearance, consisting of quartz, mundic, disseminated with yellow copper ore throughout. We are getting on pretty well with the dressing of the blende at surface, and hope soon to get it in order for sale.

CARADON CONSOLS.—S. Bennetts, Nov. 17: Clymo's lode, in the 78 west, is gradually improving, and now producing from 1 to 1½ ton of ore per fm. The winze below this level is producing good stones of ore. The gossan lode is without much alteration, further than some good spots of rich grey ore being found in the north part of the lode, adjoining the elvan.

CEFN BRWYNO.—J. Paul, Nov. 17: Saturday last being our setting-day, &c., the following bargains were let:—The 92 east to six men, at 6*l.* 7s. 6d. per fathom; the lode here has lately improved, now worth 10 cwts. of lead ore per fathom, and I expect further improvement as the level is extended. The same level west is let to two men, at 7*l.* 10s. per fathom: here the lode is very large, and disseminated throughout with blende and lead ores, but not of much value. The 80 east is let to four men, at 6*l.* 15s. per fathom; at this point there is a slight improvement, and the lode now contains good strings of lead ore. In the same level west the lode is very large, and the part the level is being extended upon is not so productive for lead, being more mixed up with blende, but it is still producing about 14 cwts. of lead ore per fathom; this point is let to six men, at 8*l.* 10s. per fathom; ground hard for exploring. The 56 east is let to four men, at 5*l.* 15s. per fathom; lode 3 ft. wide, showing a little ore occasionally. In the cross-cut north at the 20 a branch or part of the lode has been intersected, about 6 in. wide, which contains spots of lead ore, and should be driven upon after the cross-cut is extended a few fathoms further, providing there is nothing of more importance intersected, as it may yet prove to be the lode. It is often the case in this district that the lodes are found at some points to be very small, and when extended upon they increase in size, and open out productive. The cross-cut is let to four men, at 4*l.* 10s. per fathom. The machinery is all in good working order.

CHANTICLEER.—W. Wasley, Nov. 19: We finished clearing up the old sump in bottom of the 90 yard level, west of shaft, last Tuesday, and a level 4 yards east from the bottom of the sump, but as we find the water rather strong after the rain, I have put the men to sink the sump in bottom of the 110 yard level, where they are getting fine lumps of ore, and the lode looking very promssing.

CWM DARREN.—R. Clocker, Nov. 19: Since my last report the men are getting on pretty well with the sinking of the shaft, and we have now a good heap of ore stuff ready for spalling for the crusher. In the bottom of the shaft the lode continues to yield very good ore for a width of 8 feet. Our drawing goes on very satisfactorily.

CWM ERFIN.—Nov. 17: The lode in the 20, going west of the cross-cut, is 6 inches wide, composed of quartz, blende, and spots of lead ore. The lode in the stope over the back of the 10 is 1 yard wide, and worth 15 cwts. of lead ore per fathom. We continue to drive the cross-cut north in the deep adit level, and some small branches have been met with during the past week, but not of any value. We have one stope working in the back of this level producing 2 tons of lead ore per fathom, and four other stopes producing on an average 1¼ ton of ore per fm. The lode in the rise over the back of the deep adit level is 3 ft. wide, and poor. The lode at Taylor's drift, going east of boundary, is 5 ft. wide, composed of killas, quartz, and spots of mundic; about 3 fms. remain to be raised to effect a communication with the rise referred to above. Two stopes are being worked over the back of Taylor's drift, in which the lode will yield 1 ton of lead ore per fathom each. The lode in the winze in bottom of Williams's level is 1 ft. wide, worth ½ ton of lead ore per fathom. In the cross-cut north in this level nothing has been cut of any value. The new stope over the back of this level is looking well; the lode is worth 1½ ton of lead ore per fathom. We shall sample on Tuesday next 50 tons of lead ore.

EAST CHIVERTON.—R. Southey, Nov. 19: During the past month we have made good progress in sinking our engine-shaft down about 10 fms. below the 25; sinking by nine men, at 24*l.* per fathom. The main cross-cut north is driving by four men, at 28s. per fathom; ground very kindly for the production of silver-lead ore. No other change to notice.

EAST DARREN.—Nov. 17: Taylor's Shaft: In the rise over the back of the 116 east the lode is large, yielding saving work for dressing; at this point we expect to communicate to the winze in a day or two, when we shall have laid open a good piece of tribute ground. In the 104 east the lode is 3 to 4 feet wide, producing 1½ ton of ore per fathom. In the 92 east the lode is 4 feet wide, producing 1½ ton of ore per fathom. In the 92, west of boundary, the lode is 1 yard wide, yielding stones of ore at times, but not to value. In the 80 east nothing has been done since last reported, the men being placed to repair the western embankment of the pond. In the 68 east the lode is 1 yard wide, and still continues to yield a little ore, and looks promising for improvement. The pitches throughout the mine look pretty well, and yield their usual quantity of lead ore. In Skinner's shaft, sinking below the 44, the ground is composed of a dark clay-slate, and favourable for sinking. At Blaencwm we shall be ready to resume sinking the shaft in a day or two, as all surface work is nearly completed, in which we have had delay in consequence of heavy rain.

EAST GUNNISLAKE AND SOUTH BEDFORD.—James Bray, Nov. 19: The 36 fm. level cross-cut is still letting out water very freely. I find as we advance south we are meeting with pretty floors of prian. No other change in the mine to note. We have finished getting out the wheel-pit at Impham, and have commenced to take out the bob-pit.

EAST ROSEWARNE.—C. Glasson, Nov. 19: In King's shaft, sinking below the 115, the lode is 12 in. wide, worth 10*l.* per fathom; the shaft will be suspended for a few days while the men are cutting trip-plat. In the 115, west of shaft, the lode is 12 in. wide, worth 7*l.* per fathom. In the 115, east of shaft, the lode is 15 in. wide, worth 3*l.* per fathom. In the rise in the back of the 105, west of shaft, the lode is 10 in. wide, producing stones of copper ore, but not enough to value. In the 95, east of shaft, the lode is 10 in. wide, worth 3*l.* per fathom.

EAST WHEAL LOVELL.—R. Quentrall, Nov. 18: The new shaft, on the north lode below the 60, for 12 ft. long, is worth 65*l.* per fathom. The stope below the 50, on the south lode is worth 40*l.* per fathom.—Tregonebris: The lode in the shaft (12 fms. deep) is worth 15*l.* per fathom, and of a promising character.

EAST WHEAL REETH.—T. Uren: We can see the adit end; it will take a short time to get to it, it having come to an old working, 12 feet wide, full of water, which we must cover over before we can reach the end. I expect in my next I shall be able to give you particulars concerning the lode.

EAST WHEAL RUSSELL.—Wm. Richards, Nov. 19: During the past week we have passed through several small veins of quartz and mundic in the 130 fm. level cross-cut south, but we have 3 feet further to drive to be as far south as the branch passed through in Davey's cross-cut; the ground is the same character—elvan and killas. We are getting in as fast as we can in clearing and enlarging the level on the middle lode, east of the Tunnel. As far as we can now see of the lode, it is about 18 inches wide, containing flookan and friable quartz, spotted with mundic and copper ore. The north lode, east of the Tunnel, is improving as we advance; it is fully 2 feet wide, containing capel, quartz, carbonate of iron, lumps of mundic, and small stones of yellow copper ore—a very kindly point. There is no change in the other points.

EBURY.—W. Kitto, Nov. 18: We have brought the 50 up almost close to the end of the large "lough," and shall commence to drive from the end of it next week, when I will give you more particulars of the lode.

EAST WHEAL SETON.—J. Vivian and Son, W. Thomas, jun., Nov. 19: We are driving the 20, from Basset's engine-shaft, with as much expedition as possible; the lode being 3 ft. wide, and consisting principally of flookan of a favourable character for copper. We are also making the necessary preparations for sinking Basset's shaft, under the 20, with as little delay as possible. At Cartwright's shaft a plat has been cut at the 20, and we have commenced sinking below the same with nine men, at 8*l.* 10s. per fathom. In the 10, east of eastern shaft, the lode is 2 ft. wide, of a strong character, and yielding large stones of yellow copper ore.

FRANK MILLS.—J. P. Nicholls, J. Cornish, F. Cornish, Nov. 18: The ground in the cross-cut east from the 145 north, on the west lode, has much improved, letting out more water, and more mineralised, containing spots of lead ore, and sulphurous mundic: this we consider very significant of our near approach to the lode, and augurs well for its being productive. The east lode, in the 145 south, continues to produce a little lead ore. The two stopes in the back of this level, on the east lode, are yielding respectively ¾ and 3 cwts. of lead ore per fm. There is no change in the character of the ground in the cross-cut west, from the 130 north. We are now eugaged driving the 84 north on the west lode, which is yielding ⅓ ton of lead ore per fathom. The 72, driving north, on Hancock's lode, is yielding ¾ ton of lead ore per fathom; and the lode in the same level, driving south, is yielding ¼ ton per fathom. A stope in back of this level is yielding fully ¾ ton of lead ore per fathom. The same lode in the 60, driving south, is unproductive of lead ore to value. The two stopes in the back of this level are each yielding about ⅓ ton of lead ore per fathom. There is no change calling for remark in any other tutwork bargain, and the tribute department is producing about the usual quantity of ore. We sample this day (Wednesday) 100 tons (computed) of silver-lead ore, being the first for the current quarter.

GAWTON COPPER.—G. Rowe, G. Rowe, jun., Nov. 17: The ground in King's engine-shaft, sinking below the 70, still continues good, and our progress in going down very satisfactory. The lode in the 70, east of said shaft, is yielding 3 tons of ore per fathom. The lode in the winze sinking below this level is worth 8 tons of ore per fathom. The lode in the stope in bottom of the same level west is worth 4 tons of ore per fathom. The lode in the winze sinking below the 60 is worth 5 tons of ore per fm. All other points in operation are without change. The machinery and pitwork are all in excellent working condition.

GLASGOW CARADON.—W. Taylor, Nov. 17: Caunter Lode: The 78 west is worth 5*l.* per fm. The stopes in back of this level are worth from 10*l.* to 12*l.* per fathom. There is no change in the cross-cut to the south lodes at this level; we are pushing it on as fast as possible.—Arrol's Lode: The 65 east is worth 5*l.* per fathom—a very kindly lode. The stopes in back of this level are worth from 8*l.* to 12*l.* per fm. In the cross-cut from this lode to Harvey's (52) we have a change in the ground near the lode, I expect, which we are looking for daily.—Harvey's Lode: The 65 west is worth 9*l.* per fm., and likely to improve. The 65 east is worth 8*l.* per fm.; we are putting up a rise in the back of this level to communicate with the 52 cross-cut for ventilation. The stopes on this lode are varying in value from 8*l.* to 15*l.* per fm. We have sampled (computed) 300 tons of bette quality ore, for sale on the 26th inst.

GOGINAN.—November 17: The winze below the 100, east of the rise, has been communicated to the rise over the 110, which has well ventilated that part of the mine, and both levels are now in course of driving again. The lode in the present end of the 110 east is 5 ft. wide, containing good branches of lead ore, worth 12 cwts. per fathom. In the 100, east of the rise, the lode is 4 feet wide, showing a little ore, but not of much value. The stopes over the 100, east of the rise, are yielding on an average 16 cwts. of lead ore per fathom. In the stope over the drift, west of rise, the lode is 5 ft. wide, worth 11 cwts. of lead ore per fathom. The north lode, in the 60, is 3 ft. wide, harder than of late, and intermixed throughout with good strings of lead ore. The tribute pitches in the old part of the mine are producing on an average 11 cwts. of ore per fathom. The drawing, dressing, &c., are all going on regularly, but the stuff we have been drawing lately has been very coarse, and has not yielded much ore, which had to be drawn to clear out some of the stopes, &c., consequently we shall not be able to sample more than about 36 tons of ore on Tuesday next.

GREAT CWMSYLOG.—R. Clocker, Nov. 19: Since my last report the men, as I advised you, have been engaged in cutting down the south part of the lode in the western end of Oliver's adit, having got into it about 3 ft., throughout the whole of which we have had, and still continue to have, good strings of silver-lead ore. The lode is looking very promising, being large, and we shall continue to get through the vein as far as it contains lead ore. Mr. Wyatt was underground with me on Tuesday, and expressed his satisfaction with what we are doing. In my next I hope to give more particulars.

GREAT LAXEY.—R. Rowe, Nov. 17: The water is not yet sufficiently lowered in the bottom of the mine as to allow us to resume the driving of the 210 north, but we expect to be able to do so after this week. In the 200 we have made good progress in the driving during the past month, and the lode in the end is now about 4 ft. wide, worth 70*l.* per fathom. We have resumed the driving of the 190 fm. level end, which has just passed a large slide; the lode to the north of it is again taking its regular position, and daily improving in ore; by the next report I expect a good value for the end will be given. The 180 fm. level end is still worth 60*l.* per fathom for the part of the lode we are now carrying; I have no doubt that the whole width is worth 120*l.* per fathom. In the 165 we have this month suspended the driving, and commenced to sink a sump, or winze, near to the end, and in advance of the 180 about 20 fms.; this will open out a new and large section of ore ground, to all appearance very rich, as the lode in the winze is worth 140*l.* per fathom; the communication is also much required for the ventilation of the two levels. In the 155 fm. level end we are now overtaking the rich run of ore ground, just referred to, in the level below; I expect we have a large lode along side of us, of which we are carrying a part worth 50*l.* per fathom. There is no change in the 145, on the east vein, where at present it is very small; but on the west vein, which is driven on considerably in advance of the other, the lode has greatly improved, yielding good stones of ore, but we do not yet know its full width. In the south ground the only change to notice is in the driving of the 60 south, towards the corner shaft, where we have a more regular and promising lode, now yielding good stones of copper ore.—Dumbell's: We have commenced driving out the new, or 140 fm. level, from the bottom of Dumbell's new shaft; but it being so early, and not having taken off the vein in the sides, I cannot now give the value of the ends. The 125 fm. level end, driving north, has just now reached a slide known to be before us; the lode up to it was of the full value of 150*l.* per fathom; and, seeing that the lode in the sump coming down from the 110, ahead of this end, is still worth 150*l.* per fathom, we entertain no doubt of a continuation of this valuable lode northwards. I am very happy to announce an improvement again in the 110; by taken off the side of the level we have found more of the lode on the hanging side, and which is worth 40*l.* per fathom. This is a valuable feature, going, as it is, into new ground under and towards Agneash Mine. The 70, driving south of Dumbell's, is not so good as when last reported on, now worth 20*l.* per fathom. In the 60 south the lode is worth fully 50*l.* per fathom; and in the 90 north, 40*l.* per fathom. In the 50 fm. level, lately resumed to drive north, we have, so far, been driving by the side of the lode. On the whole, the levels continue to open out well, and the mine throughout never looked better.

GREAT NORTH DOWNS.—Wm. Rich, Nov. 18: The south part of the lode in Sleggan's shaft carries good stones of ore, of a very promising appearance. The ground being intermixed with floors of quartz rather impedes the sinking. The 84 fathom level end, east of Sleggan's, is worth 8*l.* per fathom. The 84 west is without alteration to notice. The winze in the 74 east is worth 15*l.* per fathom. The lode below the 74, west of shaft, is large, and worth fully 15*l.* per fathom. The lode in Butler's shaft, below the 75, is 7 ft. wide, and yielding good stones of ore. The 75, east of Butler's, is worth 10*l.* per fathom. A stope in the back of this level is worth 8*l.* per fathom. The stopes in the 64, east of Butler's are worth 15*l.*, 8*l.*, 6*l.*, and 8*l.* per fathom. The stopes west of Sleggan's are worth in the aggregate 32*l.* per fathom. Butler's north lode, below the 54, is worth 4*l.* per fathom; we expect to have the slide in this shaft after sinking a few fathoms deeper, and hope to see the lode improve as we sink below it. The 82, west of King's is unproductive at present, but the lode is large, and looks promising to improve. The stopes in this level are worth 10*l.* and 8*l.* per fathom.

GREAT NORTH LAXEY.—R. Rowe: I have nothing new to report from this mine to-day. The engine-shaft is down a little over 13 fathoms, and the lode without change. The 96 end is still worth about 15 cwts. of lead per fathom, and the lode in the 84 end north continues large, 4 feet wide, letting out a large stream of water, and stones of lead ore. The 27 end driving south is still opening out a promising lode in new ground, worth ½ ton of lead per fathom.

GREAT RETALLACK.—G. R. Odgers, J. Harris, Nov. 14: No. 1 Lode: The shaftmen are engaged making the plat and barrow-road at the 30. The lode in the 30 south is 2½ ft. wide, of quartz, &c., containing good lead, worth 3 cwts. per fm.; we believe this end will shortly improve again. The lode in the 20 south is 18 in. wide, with stones of lead. The lode in the winze sinking below this level is 1 feet wide, also containing good stones of lead. The stope above this level will produce from 4 to 5 cwts. of lead per fathom. The lode in the 20 north is from 1 ft. to 15 in. wide, of quartz, &c., worth 2 cwts. of lead per fm.—No. 2 Lode: The lode in the 40, north and south from the shaft, is 18 to 20 in. wide, of quartz and white iron, containing occasional stones of lead. There is no change in the 30 north. The lode in the north end of the winze, sinking below the 20 north, is 18 in. wide, where there is a good branch of lead, worth 15 cwts. per fathom; this is dipping out of the winze, but we have placed the men to rise against it from the 30, which we hope to nearly hole next week, when it will be available by stoping.

— G. R. Odgers, J. Harris, Nov. 18: No. 1 Lode: The shaftmen have nearly completed the making of the plat and the barrow-road in the 30, and they will resume the sinking of the shaft next week. The lode in the 30 south is 18 inches wide, producing good lead, worth 4 cwts. to the fathom. There is no change in the 30 north. The lode in the 20 south is 18 in. wide, with occasional stones of lead. The lode in the stope above this level is worth 4 cwts. of lead to the fathom. The lode in the 20 north is 18 in. wide, worth 2 cwts. of lead to the fathom.—No. 2 Lode: The lode in the 40 north is 2 ft. wide, composed of quartz and white iron, with good lumps of lead—a strong lode; the lode in the 40 south being of much the same appearance. We hope to hole to the 30 by to-morrow, which will enable us to stope the lead standing in the end of the winze.

GREAT SOUTH CHIVERTON.—J. Nancarrow, J. George, Nov. 17: The lode in the 50 west is more porous, yields a great deal of mundic mixed with blende, is letting out more water than ever, and seems very near a good course of lead. The 50 east is improving in appearance, and looks as if it would be in lead very shortly. The lead continues in the 40 west, the lode will yield 3 cwts. of lead per fathom, but contains more blende, and has altogether a better appearance than for some time past. No alteration in the 40 east. The 20 east is favourable for driving, and we are pushing it on towards the rich Chiverton lode as fast as possible.

GREAT SOUTH TOLGUS.—J. Daw, Nov. 18: Friday last was setting-day. In Noel's shaft we have changed the sinking-lift, and have set the shaft to nine men, at 16*l.* per fathom. In the 150, east of Noel's shaft, the lode is 1 ft. wide, producing good stones of copper ore; set to six men, at 4*l.* 16s. per fathom. In the 154, west of the cross-cut, on the tin lode, the lode is 4 feet wide, worth 25*l.* per fathom; set to six men, at 8*l.* per fathom. In the 154, east of the cross-cut, the lode is 3 feet wide, worth 20*l.* per fathom; set to six men, at 5*l.* per fathom. The lode in the stope in the back of this level is worth 12*l.* per fathom. About 20 fathoms west of the last-named cross-cut we are driving another south, to intersect the tin lode; set to six men, at 11*l.* per fathom.

GREAT WHEAL BADDERN.—R. Pryor, H. Tregoning, Nov. 14: Hill Brothers Engine-Shaft: In the 75, west of cross-cut, on the Baddern tin lode, the ground and lode are without change to notice during the past week, and still continue to turn out good stones of tin. In the 75, west of the cross-cut, on the silver-lead lode, the ground continues much the same for driving, and the lode about 3 feet wide, producing mundic, flookan, spar, and silver-lead.

GWYDYR PARK.—W. Smyth, Nov. 17: In the shaft at Gwyn Llifion the lode is still small, and underlying more to the north than it has been; the water is not so heavy at present. In the Vucheslas deep adit the lode is about 1 ft. wide, composed of shale, spar, mundic, blende, and strong spots of lead ore; this end looks very promising.

HINGSTON DOWN CONSOLS.—Jas. Richards, Nov. 18: At Bailey's engine-shaft, sinking below the 140, the lode has become very healthy; it is 5 ft. wide, composed of capel, quartz, peach, mundic, and stones of ore of good quality, and the appearances warrant an improvement. In the 100, west of Bailey's shaft, the lode is still being cut into; it is of a promising character, containing peach, mundic, capel, and a little ore. In the rise in the back of the 85, west of Bailey's shaft, a portion of the lode only is being carried (3 ft. wide), which is composed of capel, mundic, peach, and a little black oxide of copper. In the 85, east of Morris's shaft, the lode is the full width of the driving—4 ft., and is composed of mundic, peach, quartz, capel, and good stones of ore occasionally. In the adit level south the ground is improved, and fair progress is being made.

HOLMBUSH AND KELLY BRAY UNITED.—J. Dainty, T. Odgers: The lode continues good, and producing in the western end no less than 2 tons of ore to the fathom; this is done at a cost of 3*l.* per fathom. The east end is producing copper, with a good leader of mundic, at a cost of 50s. per fathom, and we are daily expecting a course of ore. Our stopes are turning out exceedingly well, even beyond our most sanguine expectations. The ore is of good quality. Our sampling this month is 10 tons over our estimate,—a splendid specimen now at the shaft's mouth, a rock of ore 10 cwts., and 60 tons to go market. We are getting on well with the engine-house, and most of the machinery is on the mine.

MAUDLIN.—J. Tregay, Nov. 14: The lode in the rise back of deep adit east produces 1½ ton of copper ore per fathom; in stripping down the side of the level we have a kindly branch of yellow copper ore. We have not yet interested the lode, east of the cross-course.

MID-WALES.—John Kitto, Nov. 19: Since my last report we have completed the engine-shaft to the 12 fathom level, and have since been busily engaged cutting lodge, which will be finished about the end of this week, when we shall immediately commence driving east and west on the lode, and, judging from present prospects, there is every reason to anticipate a favourable result. We have cut through the lode in the lodge upwards of 6 ft., but have not yet reached the south or hanging side, which, in all other places where opened on, has invariably proved most productive; the part already cut through is chiefly composed of a beautiful spar, mixed throughout with lead and blende, but more of the latter than of the former. The lode, although not rich, contains all the elements of success, and my opinion is more than ever confirmed by the improvement that has taken place between the adit and the 12 fathom level, that we have only to sink to a reasonable depth in order to secure a very productive mine. All the stuff coming from the lodge has to be put through the dressing-floors. The lode in the deep adit level, driving west, continues to improve in size and character. We have for some time past been driving through a tight bar of unproductive ground, which invariably occurs between runs of ore, and as the ground has been hard, the progress made has been proportionately small, but from present appearances I think we have nearly got through it, and are on the eve of entering upon the run of ore ground discovered on the top of the hill. The stope in the back of the deep adit level will still pay for working, but it depreciates in value from the roof of the level upwards. In fact, the lode has never been half as good in the stope as it was in the driving, and I am decidedly of opinion that when our 12 fathom level is extended westward underneath this point, we shall have a very productive lode; no time, therefore, will be lost in pushing this (12 fm.) level forward with the utmost possible dispatch, and the sinking of the engine-shaft for another level should also go on simultaneously.

MINERA UNION.—W. T. Harris, Nov. 19: Operations throughout the mine are progressing satisfactorily, and without any alteration since last report.

MOUNT PLEASANT.—Wm. Wasley, Nov. 19: Last Saturday being our setting-day, I set to four men to drive and raise ore near Bright's, at 8*l.* per ton for the month, the men to fill and land all the stuff, pay for drawing and candles, and 8s. per ton for dressing the ore. I am glad to say that this part of the mine has improved the last few days, and still looking very promising. Jenkins's shaft is now 11½ yards below the 120 yard level, and is set to sink for this month at 6*l.* per yard. We have now got a very hard bed of chert in the bottom of the shaft, but I hope we shall not be long before we get through it, when I have no doubt but that we shall have easier ground. I have set the 120 yard level to drive west of the cross-cut, north of Jenkins's shaft, for the month, at 25s. per yard; and set two men to drive and raise ore, west of the 90 yard level cross-cut, south of Jenkins's shaft, for the month, at 10s. per yard, and 8*l.* per ton for ore, and I am glad to say they are getting some fine lumps, and the end looking very promising.

NEW CLIFFORD.—J Michell, Nov. 19: The ground in the 50 fathom level cross-cut north is not quite so favourable for driving, having come in contact with some capel, mundic, quartz, and rich yellow copper ore branches, which are dipping towards the lode that we recently passed through, and which will fall into it in sinking a few fathoms below this point, when a rich course of copper ore is inevitable. Weston's shaftmen are day and night hardly engaged in cutting cistern-plat, fixing pitwork, dividing and putting in ladder road from the 20 to the 30 from surface, which will be completed by Tuesday next. We shall then commence sinking with a full complement of able men, and, should the shaft continue as favourable as it is in the shaft at present, we shall soon reach the 50 fathom level.

NEW CROW HILL.—T. Treloase, A. Kent, Nov. 17: At the sump-winze we sunk last month 2 fms. 3 in.; the working is now suspended. A pitch at the back of the 55 was let to four men to raise lead, at 9*l.* per ton; this pitch is not

looking so well at present. At the back of the 35 a pitch was let to four men, at 8*l.* per ton for lead; this pitch is of the same value as last reported. At the back of the 35, farther west, we have let a piece of ground on tribute to two men, at 9*l.* 10*s.* per ton for lead; this place looks rather poor at present, but there is lead in sight.—Wheal Louisa: The engine-shaft has been sunk in the past month 1⅛ fathom; re-set to nine men, at 20*l.* per fathom, stented the month; at present rather spare for sinking. The winze under the 60 was sunk last month 6 ft. 3 in., and suspended through an increase of water; since the suspension here the men have been stoping the ends of the winze, which we have now also suspended. At the 60 east there has been 4 fms. 4 in. driven; let to three men and three boys, at 4*l.* 15*s.* per fathom, stented the month; the lode in this end without change. In the bottom of the 60, a little east of the winze, we have let a pitch on tribute, to three men, at 8*l.* per ton for lead.

NEW DEVON CONSOLS.—Nov. 14: Trewollack Mine: We have now a pretty strong tutwork force employed, and in a short time we shall be ready for another pare of men to sink the old whim shaft; this shaft is about 20 fms. north of the 20 cross-cut, and is down upon the lode in the adit level. In a short time we calculate on being able to sink this shaft below the adit level, on the course of the lode, as the water will be drained from it by driving the 20 north towards it. The lode in the 20 end north is looking better, and is yielding some good work for lead; it is a fine lode, and will, no doubt, produce plenty of lead. Although the lode is not rich, we have broken some good work, and I should not be surprised by meeting with a good bunch of lead any day. The ground in the shaft is clean killas, and the men are getting on in sinking very well. The new shaftmen are also getting on very well in sinking, and are breaking some very good stones of lead; the lode is looking more settled, and will no doubt, be larger and better soon; I have a firm belief that we shall find something good before long, and I am as anxious as those who are spending their money to find it.

NEW GREAT CONSOLS.—Richard Pryor, R. Trathen, T. Bennetts, Nov. 18: Saturday last was our pay and setting, which went off satisfactorily, when our usual number of tutwork and tribute bargains were set, as well as a new shaft to sink to take the old Broad Gate shaft about 23 fathoms from surface; this shaft was set to six men, at 3*l.* per fm., 10 fms. certain, the sinking of which will be pushed on with all possible speed, so as to communicate to the above-named shaft, and when accomplished, and the shaft put into working order to its bottom (the 90), large returns of copper and mundic will be raised from this part of the mine, as well as from the engine-shaft. The rise in the back of the 40, when communicated to the winze sunk below the 20, will lay open a large piece of good and profitable ground. We have six men at this point, rising at 3*l.* 10*s.* per fm. Ellis's shaftmen are making fair progress in fixing the plunger-lift at the 74, and all being well, will be completed in about 10 days' time. We are still raising large quantities of copper ore and mundic, the dressing of which is carried out with vigour.

NEW TRELEIGH.—S. Michell, Nov. 19: No lode has been taken down for the week in any of our tutwork bargains, therefore there is nothing new to mention. I will inform you early next week how the lode looks at the different points of operation.

NEW WESTMINSTER.—W. Kitto, Nov. 18: We have put on the last pump to complete the new drawing-lift, and are now waiting for the "connection" from the foundry, but for this we should be ready to work to-morrow; however, I have again sent a cart to the foundry, and not a moment will be lost I assure you. I do not know that I have anything else to cause remark since my last.

NEW WHEAL LOVELL.—C. Bawden, J. Priske, Nov. 18: There is no alteration in any of the tutwork bargains since last report, except an improvement in the winze sinking below the 50, where the lode is worth 40*l.* per fathom. On the whole, the mine is looking remarkably well.

NEW WHEAL TOWAN.—Richard Pryor, Nov. 18: The caunter lode, met with in the winze sinking below the adit level, is about 18 in. wide, composed of mundic, prian, and good stones of copper ore. We have about 10 ft. deeper to sink to communicate to the adit cross-cut. This bargain was set again on Friday to four men, at 8*l.* per fathom.

NORTH DOWNS.—F. Pryor, J. Williams, Nov. 17: We have nothing new in this mine to report on since last week. Saturday next being our setting-day we will send you all particulars, with the quantity of ore we sample, on the following Wednesday.

NORTH JANE.—J. Rowe, Nov. 19: The lode in Leed's engine-shaft, sinking below the 36, is 5 ft. wide; it is improved in size and value since we have commenced sinking below the 36. For the length of the shaft (12 ft.) the lode is worth 12*l.* per fathom, and shows every indication for further improvement. The 36, east from Leed's shaft, is driving by four men; the lode is 3 ft. wide, producing good stones of tin.

NORTH RETALLACK.—G. R. Odgers, J. Harris, Nov. 18: The lode in the 20, north from No. 1 boundary shaft, is from 15 to 18 in. wide, of killas, with branches of spar and white iron, containing good lead—saving work.

NORTH TRESKERBY.—R. Pryor, T. Jenkin, Nov. 19: Tresidder's Shaft: In the 130, east of shaft, is 4 ft. wide, and still worth from 1½ to 2 tons per fm., with a good appearance. The lode in the 120 fm. level end, east of shaft, is 2½ feet wide, producing some good copper ore, but not yet enough to value; we are daily expecting an improvement at this point, as we are nearing the ore ground driven through in the level above. The lode in the winze sinking below this level is worth 12*l.* per fathom, and likely to improve. The lode in the 110 fm. level end, east of shaft, has improved, and now worth 1 ton of copper ore per fathom. The lode in the stopes in the back of this level is still worth 4 tons of ore per fathom. The sinking of the new shaft is progressing very satisfactorily, and is now down about 13 fathoms below the surface. All other places are without change since our last report.

NORTH WHEAL CROFTY.—Joseph Vivian and Son, William Thomas, jun., Nov. 19: In the western levels, from the 208 to the 150, we are opening through a lode of strong character, leaving high tribute ground. The lode in the 170 deserves particular notice, on account of its large size and mineralised character, being 8 ft. wide, containing tin, copper, and mundic. In the eastern levels there is not the slightest change since the report to the meeting of shareholders. The winze under the 183, east of Praed's shaft, continues worth 40*l.* per fathom.

OKEL TOR.—J. Rodda, Nov. 19: The south lode, in the 80 east, has an improved appearance, and is producing some good stones of ore. The stope in the back of this level will yield 3 tons of ore per fathom. In the 80, west of the cross-cut, the lode is from 2 to 3 ft. wide, and yielding 1½ ton of ore per fathom; this end in the course of 8 or 10 fathoms driving will be under the shoot of ore discovered in Gerry's cross-cut, in the 65. The lode in the 65, east of Gerry's cross-cut, has been cut through, and towards the footwall we have a good leader of ore, of a porous character, and yielding 3 tons per fathom. In this level west the part of the lode being carried will yield from 2 to 3 tons of ore per fathom, and the stope in the back will produce 3 tons of ore per fathom. The 65 cross-cut, south from the footway winze, is progressing satisfactorily. Two of the pitches in the back of the 65 are much improved. No other change to report.

OLD GUNNISLAKE.—H. Rickard, Nov. 19: Saturday last being our setting day the 48 fm. level cross-cut at Parker's was set to drive north by six men, at 5*l.* per fathom; stented 2 fathoms. We have completed the collaring up of Parker's shaft and putting in of the penthouse, and have taken up all the water at the deep adit level, which will enable us to commence sinking Parker's shaft below the 48 without the aid of pumping; the ground at present is rather stiff. I have only set two fathoms stent by six men, at 20*l.* per fathom, as I expect a change in the ground shortly for the better. All the filling and landing and to weigh all the coal by two men, at 7*l.* per month.

PEDN-AN-DREA UNITED.—W. Tregay, J. Thomas, Nov. 14: Sump: In the 140 west the lode is worth 10*l.* per fm. In the 130 west the lode is worth 8*l.* per fathom. In the 130 west rise the lode is worth 6*l.* per fm. In the 120 west winze the lode is worth 10*l.* per fm. In the 120 east end the lode is worth 12*l.* per fm. In the 100 east rise the lode produces occassional stones of tin, but not to value. In the 68 east no change from last report.—Cobbler's: In the 120 fm. level cross-cuts we have not yet reached the footwall in either of them; the lode course, and producing occasional stones of tin. In the stope in bottom of the 120, west of shaft, the lode is worth 23*l.* per fm. In the 110 east winze the lode is worth 8*l.* per fm. In the 90 north the cross-cut is being driven by six men; there is a large quantity of water which appears to be increasing.—North Mine: In the 55 west the lode is worth 25*l.* per fm. The pitches in the upper levels are producing their usual quantities of tinstuff, and about the same quality as heretofore. There are no other changes to report.

PENHALE UNITED.—R. Pryor, H. Bennetts, J. Pryor, Nov. 16: The lode in Phillips's engine-shaft, sinking below the 90, continues to be worth 10 cwts. of lead per fathom, and likely to improve in depth. The lode in the rise in back of the 90, north of shaft, is improved, and now worth 7 cwts. of lead per fm.; the lode in this level, driving south of shaft, is also improved, and worth at present 7 cwts. of lead per fathom, with a good appearance.—Hall's Shaft: We shall complete the clearing and securing the 80, north of this shaft, by the end of this week, and the driving of which will be resumed at once. Our prospects are greatly improved, and it is only a question of a little time and money to open up here a valuable property.

PENHALE WHEAL VOR.—Wm. H Martin, Nov. 18: The engine-shaft men are making fair progress in sinking below the 94; the ground is mixed up with a great deal of spar. The ground in the north cross-cut, in this level, is mixed up with hard floors of capel, and our speed at this point is slow. No change to remark on the south cross-cut.—Penhale Lode: The lode in Ritchie's shaft, sinking below the 60, is 15 in. wide, and produces stones of tin—a very kindly-looking lode. In the 60, west of this shaft, the lode is 15 in. wide, yielding stamping work for tin. The tributers are getting a fair amount of wages. We have about 5 tons of tin ready for market.

PERRAN SILVER-LEAD.—M. Wasley, Nov. 17: We have decided on the spot for the engine-shaft, and have commenced to drive east from gossan shaft on the cross-course at the adit level, about 4 fms. from surface; I expect about 5 fms. will be sufficient driving, as this will enable us to sink on the cross-course, without being interrupted from the drainage of the lode; the ground being favourable for working, we expect to sink with rapidity and economy.

PRINCESS OF WALES.—Thos. Foote, G. Rickard, Nov. 18: We continue to make excellent speed with the sinking of the engine-shaft, the water having fallen off considerably, which is now down 18 fathoms from surface; the ground in the present bottom is highly mineralised, and favourable for progress. The engineers are busily engaged about putting in the engine, and every effort will be made to set it to work as early as possible.

REDMOOR.—T. Taylor, Nov. 19: The lode in the 25 west is about 2½ ft. wide, producing some good saving work for tin, which will pay for stoping. We are driving the 25 east through the elvan; the ground is soft, worth 3*l.* 10*s.* per fm. As soon as we get through this elvan we shall cross-cut south to the lode. We are getting on with the new ovens, &c., as fast as possible, also with the dressing of another batch of tin for the market.

ROARING WATER.—H. Thomas, Nov. 17: The following bargains were set last Saturday:—The 45 fm. level cross-cut to drive south from Gilliman's engine-shaft with six men, at 5*l.* per fathom; at present this end is in a beautiful elvan, spotted with yellow copper ore, and very wet: from indications I should think we are not far from a lode. The end to drive west on north of Grady's lode, at the 45, to six men, at 7*l.* 7*s.* per fathom; we are carrying the level about 4 ft. wide, and a large part of the lode standing south of the drivage; this lode presents a very fine appearance, composed of gossan, quartz, and patches of rich grey ore and micaceous iron, which is an excellent indication for copper. We shall have to drive about 8 fathoms to intersect the great caunter, which we shall push forward as fast as possible, and it may reasonably be expected when the intersection take place good results will follow. I have put a miner and labourer to open east on Grady's lode, at the 45, to ascertain its character; the appearance of the lode fully justifies this being done; the machinery, and everything connected with it, is in good working order.

SOUTH CONDURROW.—J. Vivian and Son, Wm. Williams, Nov. 14: In the 93 we are progressing favourably, but have not yet intersected any lode. The same remark applies to the 82, west of King's shaft. In the 72 we are still cutting through the lode, which is of much the same character as when last reported on, being hard blue chlorite, thickly traversed by veins and seams of rich tin ore. In the 61, west of King's shaft, we have cut through a part of the lode about 3 ft. wide, which is tinstone of moderate quality, but the main part of the lode is still before us. The stopes in the back of this level are producing tinstone of good quality for a width of about 4 fms. Our stamping-mills are turning out tin quite equal to our estimates of the value of the lode.

SOUTH DARREN.—John Boundy, W. H. Boundy, Nov. 16: In the 70 west the lode is 2 ft. wide, containing spots of lead and copper, and presenting a better appearance than for some time past. In the 60 west the lode is still disordered, being under the influence of the cross-course recently passed through; however, we think it will improve as we advance. In the 50 west the lode has slightly improved in appearance during the past week; now producing spots of lead and copper ore. The drawing-shaft is communicated to the 70 west; we shall now commence cutting plat in this level—the 70. The stopes are without any change to notice since our last report. We have sampled to-day 25 tons of silver-lead ore, and 20 tons of copper ore.

SOUTH GREAT WORK.—Samuel J. Reed, Edward Chegwin, Nov. 18: Since our last report good progress has been made in the 17 fm. level cross-cut south, towards the Giant lode. We are now driving at the rate of 3½ fathoms a week; the ground is a beautiful soft clay-slate, and highly mineralised. In the 17, west of Boase's shaft, the lode is 15 in. wide, with quartz and chlorite, worth for tin 7*l.* per fathom, and is being driven at 38*s.* per fathom. In this level, west of said shaft, the lode is 1 ft. wide, yielding stamping work, and likely further to improve. The rise in the back, now up 2 fms., has a favourable appearance, worth 4*l.* per fathom. We are pleased to add that the prospects are exceedingly encouraging, and ground easy for exploration. We are preparing some parcels of tinstuff for sampling, one of which is of a rich quality.

SOUTH HERODSFOOT.—W. Goldsworthy, Nov. 19: We are making good progress in driving the cross-cut in the 100; the ground is without change to notice, being a beautiful looking killas, and letting out water.

SOUTH TREVENNA.—W. H. Willcock, Nov. 18: The lode continues of the same rich character, both to the east and west of the winze, on No. 2 lode, being from 5 to 6 ft. wide, carrying a horse of killas between two rich leaders of tin ore, each about 10 in. wide. We are preparing a small batch of tin for sale, and as the stamping machinery in a few days will be in thorough working order, we shall be able to increase our returns, and, before long, have a dividend mine.

ST. JUST AMALGAMATED.—R. Pryor, W. White, R. Wearne, Nov. 17: There is no change to notice in Phillips's engine-shaft, sinking below the 50, since our last report.—Saveall's Lode: The lode in the driving, east of engine-shaft, is worth 5*l.* per fathom. The lode in this level, west of shaft, is worth 6*l.* per fathom. The lode in the 100, driving east of shaft, is worth 5*l.* per fathom. This level, driving west of shaft, is worth 4*l.* per fathom. The lode in the 90, driving west of shaft, is worth 5*l.* per fathom.—Owl Lode: The lode in the 40, driving north of Reddipper, is worth 4*l.* per fathom. The lode in the 20, driving north, is worth 6*l.* per fathom. The lode in the 10, driving north, is worth 4*l.* per fathom, and promising a further improvement. The lode in the 10 north, on branch, is worth 5*l.* per fathom. The lode in the winze sinking below the adit, on branch, is worth 7*l.* per fathom. The lode in the 20, east of Reddipper shaft, is worth 4*l.* per fathom. The lode in the 62, driving west on Pryor's lode, is worth 5*l.* per fathom.

STRAY PARK.—J. Thomas, Nov 20: The plat is cut, and skip-road nearly completed to bottom. We shall shortly begin to sink the shaft. We have set the 265 fathom level west, and six pitches on tribute, at 13*s.* 4*d.* in 1*l.* A fuller report next week.

SUMMER HILL.—W. Wasley, Nov. 19: I have re-set Wynne's shaft to eight men, to sink until the end of the month, at 80*s.* per yard, and I am glad to say that we are making good progress with the sinking. We continue to make good progress in driving the levels near Hale's shaft, which are without any change to notice since last reported on.

VIGRA AND CLOGAU.—W. J. Holman, Nov. 19: The lode in the stope east from No. 6 shaft is 6 feet wide, and as the water in this shaft has considerably fallen off, pretty good progress is being made in driving the stope forward. In the stope west from same shaft the men are cutting the lode 5 feet wide, and there still remains some on the hanging wall, which will be taken down as soon as the men get sufficiently advanced in the end. The lode in the No. 1 end, east from No. 1 shaft, is still rather disordered and poor. All other works on the No. 2 mine are without change. At the old Clogau Copper Mine the men will commence winding stuff and water from the bottom of the mine on Monday next. The skip incline shaft is being continued as usual. In the Jenny's adit, at Vigra Mine, no change has taken place during the past week. By this post I forward you 56 ozs. 6 dwts. 18 grs. of gold. [The above gold has been received at the offices of the company.]

WEST CWM ERFIN.—Nov. 18: The lode in the adit level going east of engine-shaft is 3 ft. wide, containing spar, blende, and clay-slate, with a little lead ore, and looks promising for an improvement. In the same level east of cross-cut, 55 fms. east of engine-shaft, the lode is 5 ft. wide, with spots of lead ore. The cross-cut north in the adit level, 6 fms. east of engine-shaft, is still being driven, but no change in the ground.

WEST DRAKE WALLS.—T. Gregory, Nov. 18: We have a little improvement in the ground in the 40 fm. level cross-cut south, and the water is again increasing. In the 40 fm. level cross-cut north good progress is being made, the ground being of a very favourable character for driving.

WEST GODOLPHIN.—Joseph Vivian and Son, John Pope, jun., Nov. 19: We have been delayed in sinking Paull's shaft, under the 35, by want of ventilation, but have remedied this, and again resumed sinking in a large, fine-looking tinny lode, and are likely soon to be making valuable discoveries. The levels driving east from this shaft are without alteration since last reported on. The stopes in the back of the 35, east of Paull's shaft, are worth 10*l.* per fathom; price for stoping, 1*l.* per fathom. The caunter lode, in the deep adit level, south-east of of Pressure shaft, is looking better than it has done for some time, and likely soon to be equally as rich in tin as it has already been at several points. Our stamping-mills are now working, and disposing of a large quantity of tinstuff. We shall be sinking the Pressure shaft, by aid of the hydraulic-engine, next week, and be thus opening out additional tin ground of a profitable character.

WEST GREAT WORK.—S. J. Reed, Nov. 18: I am very pleased to inform you of an improvement in the 50, east of flat-rod shaft, on the great north lode; it is now 1½ ft. wide, composed of quartz, chlorite, and mundic, and worth 6*l.* per fathom for tin; I expect this will further improve as we approach the eastern cross-course. The lode in the 40 east has more water oozing from it, and worth 6*l.* per fm. The rise from the 30 has been communicated, and produces good ventilation; this has opened up a new section of tribute ground. The rise against Harvey's shaft, from the 20, is worth 4*l.* per fm., and looks promising. In the 8, at Watson's shaft, the lode is 2 ft. wide, worth 20*l.* per fm. In the adit east the lode is 1 ft. wide, worth 7*l.* per fm.; driving at 30*s.* per fm. The rise and stope in the back of the adit, west of Watson's, are worth 12*l.* per fm. In the tribute department we have increased our number of hands, at tributes varying from 6*s.* to 13*s.* 4*d.* in 1*l.* Our prospects, on the whole, have improved. We shall sample on Tuesday next about 40 tons of copper ore.

WEST MARIA AND FORTESCUE CONSOLS.—William Skewis, J. Dounal, Nov. 17: West Maria Lode: The lode in the 60, east of Maria engine-shaft, is 5 feet wide, worth 12*l.* per fathom. The lode in No. 1 stope is worth 8*l.*, and in No. 2 stope it is worth 9*l.* per fathom. The lode in the 60 west has not yet been taken down; the ground by the side is favourable for driving. The lode in the 50 east is worth 18*l.* per fathom; and in the rise in the back of this level, 6*l.* per fathom. The lode in No. 1 stope, in the back of these levels, is worth 14*l.*, and in No. 2, 20*l.* per fathom. There has been no lode taken down in the 40 east, nor in the stope in the back of this level. The 40 fathom level cross-cut north is being pushed on as fast as possible, in order to communicate with the 40, from Maria engine-shaft, which we hope to do this month.

WEST PRINCE OF WALES.—W. C. Cock, Nov. 17: The south engine-shaft is sunk 5 fms. 5 ft. 6 in. below the 16; the lode is still small, and not yet out of the floor of spar that came in from the footwall. The 16 east, on this lode, is driven from shaft 14 fms. 3 ft. 10 in.; and the same level west 13 fms.; the lode in each end is yet unsettled, consisting of flookan and a soft decomposed killas, with branches of spar, containing a little mundic, and spots of copper ore occasionally. The 16, east of north engine-shaft, on the main lode, is extended 19 fms. 5 feet from shaft; lode large, consisting of capel and spar, and is letting out a great quantity of water.

WEST WHEAL TOLGUS.—Nov. 18: Taylor's sumpmen are making good progress in sinking Taylor's shaft below the 95. The lode in the 95 east is 5 feet wide, producing 6 tons of ore per fathom, worth 30*l.* per fathom. In the 95 west the lode is 7 feet wide, yielding 7 tons of ore per fathom, worth 40*l.* per fathom. The rise in the back of the 95 east is worth 25*l.* per fathom. The stope in back of this level west is worth 35*l.* to 40*l.* per fathom. The lode in the 85 west is 2 feet wide, unproductive. In the 85 east the lode is 4 feet wide, yielding from 4 to 5 tons of ore per fathom, worth 20*l.* per fathom, and looking better than when last reported. In the 75 west the lode is large, from 3 to 4 feet wide, producing stones of ore, but not to value. The lode in the 65 west is getting larger than it has been for some time, and letting out more water, now 2 feet wide, consisting of spar and peach. We have four stopes over the back of the 85 fm. level, working by 24 men, each worth 14*l.* per fathom. The lode in Richard's shaft, sinking below the 22, is 4 feet wide, consisting of killas, spar, blende, and stones of ore, and much the same in appearance as for some time past. We sampled yesterday 361 tons of ore (computed), of rather better quality than the last.

WEST WHEAL TREMAYNE.—S. Roberts, Nov. 17: The shaftmen have completed the cutting of the plat, put in a pent-house, and will commence sinking to-day for the bearers and cistern of the lift, which we must necessarily fix at this level before we can sink further. In the 32 end west the lode is from 10 to 12 in. wide, producing a little ore—a kindly lode. There is no improvement in the 20 end west, on the engine lode, since last week. In the 20 end west, on the south lode, there is an improvement in the lode, it being 9 in. wide, and yielding fine stones of yellow ore; we think this end is near the junction of the south caunter lode, and that its influence will improve the lode in this end.

WHEAL AGAR.—E. Rogers, 17: We are making good progress in sinking both the engine and flat-rod shafts, especially the latter; where we expect to get down to the 170 in about five weeks from this time, and also get down to the 130 in the engine-shaft by the end of next month. The lode in the 110 end is at present small, but I believe the falling off is only temporary.

WHEAL COURTENAY.—J. Gifford, Nov. 17: In the 20 west the lode is still large; 2 ft. of the south part is worth 8*l.* per fm. No other change.

WHEAL CREBOR.—J. Gifford, Nov. 17: In the 120 east the lode is 3 ft. wide, composed of capel, quartz, and peach, with stones of mundic and copper ore intermixed—a very promising end. In the 120 west we are driving by side of the lode, and shall cut into it the latter part of the week. In the 108 east, on the south lode, under Davis's pitch, we are driving by side of the lode, and shall cut into it the latter part of the week. In the 96 cross-cut south, driving east on the south or Buctor lode, the lode is 1½ ft. wide, composed of capel and quartz, with occasional spots of mundic and copper ore, but of no value; the end is letting out a little water. No change in the tribute pitches.

WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Nov. 19: We are busy sampling our tinstone, and we hope to have a good parcel of tin to sell next week. All the places underground are looking precisely the same as we stated in our last.

WHEAL KITTY (St. Agnes).—S. Davey, W. Polkinghorne, Nov. 14: In the 82, driving west of Holgate's shaft, the lode is still large, and although not yielding so much copper ore yet, is richer for tin, and worth for both 12*l.* per fm.—New Shaft, Pryor's Lode: In this shaft sinking below the 94 no change worthy of remark has taken place. In the 94, driving west of shaft, the lode is 5 ft. wide, and worth for tin 20*l.* per fm. In the 94, driving east of shaft, the lode is 2½ ft. wide, and worth for tin 16*l.* per fm. In the 82, driving west of shaft, the lode is 2 ft. wide, and worth for tin 13*l.* per fm. In the 82, driving east of shaft, the lode is worth for tin 9*l.* per fm. Neither in the 65, driving west of shaft, or in the winze sinking below this level, has there been any lode taken up during the week.—Caunter Lode: In the 82, driving north of shaft, the lode is improved, now worth for tin 10*l.* per fm.—Vottle Lode: In the 24, driving east of cross-cut, the lode is poor.

WHEAL MARY ANN.—P. Clymo, J. Harris, J. Stephens, J. Skeat, Nov. 19: Clymo's shaftmen, having completed sinking the lift, are now engaged in cutting a trip-plat at the 240 fm. level. In the 230, north of Clymo's shaft, the lode is 1 ft. wide, producing good stones of ore. In the same level south it is 1½ ft. wide worth 5*l.* per fathom. There is no change to notice in the 220 north; in the same level south the lode is 3½ ft. wide, worth 21*l.* per fathom. In the 210 north the lode is 1½ ft. wide, producing stones of ore. In the same level south the lode is 1½ ft. wide, worth 4*l.* per fathom. In the 200 north the lode is 2 ft. wide, worth 4*l.* per fathom. In the same level south it is 2 ft. wide, worth 7*l.* per fathom. In the 190 north the lode is 2½ ft. wide, worth 6*l.* per fathom. In the 180 north the lode is 3 ft. wide, worth 4*l.* per fathom. The stopes and pitches are producing much as usual. We have this day sold, to R. Michell and Son, our two parcels of lead ore—No. 1 (computed), 62 tons, at 24*l.* 3*s.* 6*d.* per ton; and No. 2 (computed), 46 tons, at 16*l.* 8*s.* 6*d.* per ton.

WHEAL MARY FLORENCE.—W. Johns, W. Verran, Nov. 13: We are forcing on the driving of the cross-cut north at the 25, or bottom of Saw's shaft, with all energy, and we are now entering a similar sort of ground as we had in the cross-cut above, before reaching the lode; this is a very interesting point, and no doubt will be attended with successful results. In the 15, west of cross-cut, we are only carrying a portion of the lode in the end, and when last taken down for a short distance it produced about 2 tons of yellow copper ore. In the same level east we are driving by side of the lode for dispatch, and shall continue this course, before cutting into the lode, until we think we are in run with the shoot of ore seen in the shallow adit. We are now in the way of opening out ground rapidly, and the chances of success seem exceedingly good.

WHEAL SPARNON.—W. Tregay, Nov. 14: There has been nothing new met with in the costean pits since last report. We hope to be enabled to sink on the lode, which has been already reported next week, as the water is abating: this is a kindly lode for the production of copper ore. No other change to report.

WHEAL TRELAWNY.—W. Johns, T. Grenfell, J. Pryor, Nov. 17: We have resumed the sinking of Trelawny's engine-shaft, by nine men, at 20*l.* per fm., thus showing that the ground is easy for progress, taking the depth into consideration. In the 220 north, and in the 210 north, as well as the 210 south of shaft, no lode has been taken down since last reported on. In the 152 south the lode is worth 5*l.* per fm. In the 210, south of Smith's shaft, we are going on by the side of the lode. In the 210 north the lode is improving, worth 7*l.* per fm.; this end seems to be entering the ore ground as mentioned in our last report. In the 196 south the lode is worth 15*l.* per fm. The stope in advance of this end is worth 20*l.* per fm. In the 136, north of Chippendale's, we have got out of the influence of the slide or disordered ground, and it is gratifying to us to see to-day that the lode is worth 20*l.* per fm. We shall sample to-morrow about 140 tons of silver-lead ore.

WHEAL TREVENNA.—W. H. Willcock, Nov. 18: We are continuing on the drivage of the cross-cut north from the deep adit at the eastern end of sett, and have now acquired a depth of 27 fathoms, and I am pleased to say the object I had in view, in pushing forward this drivage is likely to be realised, as we appear to be rapidly nearing the lodes, ore of copper, the other of tin; having this week had the ground highly mineralised, carrying a quantity of mundic, beautiful spots of copper ore, spar, and elvan—the end is now as green as can be—the ground is very hard. I trust to see as valuable a lode as I have opened out at South Trevenna.

WHEAL UNY.—S. Coade, M. Rogers, Nov. 14: The engine-shaft is sunk 6 fms. below the 140; the lode in the shaft is worth 24*l.* per fm. The lode in the 140, east of engine-shaft, is worth 25*l.* per fm. The 140, west of engine-shaft, is worth 8*l.* per fm. The 130, east of engine-shaft, is worth 10*l.* per fm. The 120, east of engine-shaft, is worth 14*l.* per fm. The 110, east of Goodinge's shaft, is worth 9*l.* per fm. The 100, east of Goodinge's shaft, is worth 10*l.* per fm. The 140, east of incline shaft, is worth 7*l.* per fm. The 120, west of incline shaft, is worth 6*l.* per fm. We have sold to-day to Daubuz and Co., 11 tons 13 cwts. 0 qr. 19 lbs. of black tin, at 58*l.* 5*s.* per ton.

WYE.—John Paull, Nov. 13: Murchison's shaft is down 4½ fms. from surface, and has reached the rock; six men have taken to continue the sinking for this month out, at 13*l.* per fathom, and at the general setting-day, on the 28th inst., we shall endeavour to arrange a contract for (say) 10 fms., in order to encourage the sinking with all possible speed. In the winze sinking under the adit level, and which has attained a depth of 4 fms., the lode is orey, but at present the main or the richest part of the run of ore commenced in appears to have dipped to the eastern end of the winze. In the adit level going west the lode is still very large, and the part driving upon has, during the last few days, yielded good stones of lead ore. Fair progress is being made with these three points underground, and also the operations at surface, such as making a cart-road on to the top of the engine-shaft, and to where the water-wheel is to be erected. The foundations for store-house and smithy are being excavated, and stone quarrying for building the same.

been in demand the past two months. LOVELL CONSOLS promises to become rich for tin, and at present low price shares are worth attention. EAST TRUMPET shares, at 2 to 2¼, are worth buying. They adjoin Trumpet Consols. Nearly all the shares are held in Cornwall. A few more calls will suffice to enable them to pay costs. Shares will rise 50 per cent.

From Mr. F. W. MANSELL:—The Market for Mining Shares during the past fortnight has shown an absence of that activity we had to report some three weeks since. This is, probably, owing in a great measure to the elections, which monopolise the attention of the public for the time. Dividend mines maintain their price, which cannot be said of the market "favourites." These, in most cases, have receded, which can scarcely be wondered at, when we see the startling fluctuations in the daily price of many of them, and which are brought about by reported sudden discoveries, which just as suddenly disappear, and which some few years since little or no notice would have been taken of; but now "telegraphed," and used for the purpose of running up the price of shares, and entrapping the unwary. These "flash-in-the-pan" discoveries invariably lead to loss and disappointment, which could, in a great measure, be avoided by using ordinary caution. For a fee of two or three guineas a practical and disinterested report can always be secured, which surely it is better to have than to lose 20 or 30 per cent. of the purchase-money, which too frequently occurs in this description of mines. West Chiverton, West Seton, Mary Ann, Great Laxey, Prince of Wales, and Marke Valley shares are firm, and have been largely dealt in, at advanced prices. In progressive mines, East Caradon, South Condurrow, and Tamar Valley shares have met with more enquiry. At the latter mine (TAMAR VALLEY) a meeting was held on Monday last, when a call of 4s. per share was made, to clear off all liabilities, and which places the mine in a sound financial position. The manager's report of the 17 and 27 fm. levels, on the South Tamar lode, is most satisfactory. Each of these levels will leave a profit to the adventurers. Full particulars of the meeting appear in another column. At GREAT SOUTH CHIVERTON they are close upon the course of ore in the 70, which holds out the promise of far surpassing the rich lode met with in the 40 fm. level. Regular returns of lead may be looked for now that the mine is being laid open. SOUTH CONDURROW is approaching dividends, and, from its close proximity to its rich neighbours, should not be lost sight of. Large numbers have been purchased during the present month for investment. CARN BREA shares have changed hands at quotations. The mine is looking well. The present lull offers a good opportunity for securing shares in each of the above, which should be taken advantage of, my belief being that better days are close at hand for all interested in legitimate mining.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

FRANK MILLS.—As a corroboration of my remarks relative to the financial position of the mine, I am now in a position to give the following facts:—On Wednesday 100 tons of No. 1 quality lead, value (say) 1600*l.*, was sampled. In addition to this, there were 40 tons of lower quality, value about 400*l.*, at the stores ready for the market towards the second sale in the quarter. The return of lead, as will be seen, will leave a fine profit to the shareholders, and (as previously stated) place the mine again into a dividend state at the next meeting. After charging every item to Oct. 23 there was a balance, as shown by the very clear statement issued to the shareholders, of 1076*l.* 17s. 9d. to the credit of the company.—EDWARD COOKE.

EAST CHIVERTON.—This mine promises to become one of the prizes of this justly celebrated district. In the 25 fathom level we find they have passed over a good lode; for 24 fms. it has been yielding lead ore. This lode we found especially good in the bottom, thus proving that a rich deposit of ore is below. They will cut the lode again 40 fms. from surface; the shaft is now down 35 fms. This mine should not be lost sight of. We are informed that a large number of shares have been bought up by private individuals. All the West Chiverton lodes pass through this property.

NANGILES.—The points to come off here are some of the most important in the county. They may cut one of the Consolidated lodes any day in the 130 cross-cut (160 fms. from surface), or it may take a few months, but it is certain to be met with. It is a well-known fact that this mine adjoins the mines which have proved the richest in all Cornwall, and it is also a fact that all these rich lodes pass into Nangiles. The lode in the shaft is 3 ft. wide, very promising, now 6 fms. below the 130 fm. level. The lode in the 130 fm. level is 2½ ft. wide, producing 1½ tons of ore per fm. They have a considerable quantity of copper ore to come away between the 120 and 130 fm. levels. We hear this mine has just been inspected by a Yorkshire mining agent, for the executors of a large holder, who stated he doubted whether such a fine piece of mineral property would be again found in the kingdom. The result is, the executors intend to hold on the shares. There are only 1024 shares in the mine.

BRONFLOYD.—The ore is not yet reached by the 73 fm. level cross-cut, south from the bottom of the new shaft, and this is causing some surprise and anxiety, although the agent is of opinion that a great change has taken place between the 62 and 73 in the dip of the ore. This was partly indicated by the ground in the shaft, although too much north to be a correct index, and partly by the bottom of the level above; however, it is believed that a few fathoms further driving will dispel any doubts of the holding down of this great and valuable deposit of ore.

PAR CONSOLS.—Capt. F. Puckey (Nov. 10) reports that since the last general meeting of shareholders, and in accordance with a resolution then passed, for giving notices to the various lords of the soil to stop the works, they are confining themselves to the taking away of such ore ground as will pay for working. They have nine tribute pitches at work, and two men stoping, together twenty-seven men breaking ore, and six shaftmen attending to the pitwork and doing other necessary work. As they require to pump the water to surface to return the ores and halvans, and as they are scarcely raising any ore below the 40 fm. level, he recommends to at once draw up the bottom plunger, and to keep the water at the 50 fm. level until such period as is specified in the notices. This will still considerably reduce the cost of pumping the water, and in the meantime they can profitably work the ground above that level on tribute, &c.

WHEAL JANE.—This good old mine still goes on improving, having sold on Wednesday 30 tons of black tin, one month's produce. North Jane adjoins, and they are now working on the same rich lode, from which they have raised and sold this week a parcel of good quality tinstuff.

THE CORNISH MINE SHARE MARKET.—Owing to the all-absorbing interest attending the parliamentary elections, business in the Cornish Mine Share Market since last week has been almost at a standstill, and prices have undergone scarcely any change. A few enquiries after, and in some cases transactions in, the following stock, are the only noticeable features we have to report in our *resume* of the transactions in the share market for the week. South Condurrow has been enquired for at 19s.; East Grenville flatter, 3¾; Chiverton, being short for delivery at the last settling, advanced to 4⅛, 4¾, but are now 4¼ to 4⅛. Stray Park dealt in during the week at 7 to 8; we hear that the improvement reported last week has induced more vigorous operations, and should the tin ground discovered in the 215 be found to last down to the 250 (which they are now endeavouring to prove), the enterprising and persevering spirit of the shareholders will be deservedly rewarded. South Crofty shares have been in slight demand at 13 to 14; we hear that an improvement has taken place in the mine, but are unable to gather any reliable information concerning it. Marke Valley, 9 to 9¼, firm; New Seton dealt in at 50 to 52½; Prince of Wales, 38s. to 40s. Tincroft, Cook's Kitchen, Providence, and Carn Brea quotations remain unaltered since last week, there being scarcely any dealings in them. West Frances quoted slightly lower, 33 to 35; Emily Henrietta declined to 22 sellers, owing to the lode in the 70 fm. level end having become disordered; Dolcoath, 360 to 400; West Seton, 180 to 190.—*West Briton.*

THE ABERDOVEY LEAD MINE.—Some time ago this mine was in full working, a great number of hands employed, and expensive machinery erected for crushing the ore and other purposes, but, whether from want of capital or mismanagement, it has ceased working for several years. We are glad to say that there is a probability of it starting again under favourable circumstances. We hear that the mine which is called the "Corbet Dovey," has recently been reported upon by Capt. Aaron Ede, of Llanarmon, near Mold, and also by Capt. R. H. C. Verran, a practical mining engineer, now residing in Dublin, but well-known in these parts. Their reports, we hear, leave no doubt of the value of the mine as an investment. There are several silver-lead lodes in the property yielding by assay 60 to 80 per cent. for lead, and 20 to 30 ozs. of pure silver to the ton of ore. The entrance to some of the levels (where a lode is at present valued at 15 cwts. of silver-lead ore per fathom) is situated within about 40 yards of the public wharf at Aberdovey, which will give the company most unusual facilities for shipping ore, and prove a great saving in the usual cost of carriage. Capt. Verran, we are given to understand, is at present dialing the lodes, &c., and we trust it will be very shortly operated upon, as it will be a boon to the neighbourhood, and doubtless, under judicious management, will turn out a remunerative investment.—*North Wales Chronicle.*

"DEEP DOWN: A TALE OF CORNISH MINES."—There is something so romantic and interesting in the miner's occupation that narratives of Cornish life and Cornish manners are at all times attractive, not only to the natives and inhabitants of the county, but to all who are either directly or indirectly connected with mining enterprise, more especially when the style is as excellent as that met with in Mr. Ballantyne's "Deep Down." * The book has been written not with a view of giving a complete description of the mines, the fisheries, or the social condition of Cornwall, but for the purpose of exhibiting as graphically as may be some of the most interesting and picturesque scenes, incidents, and facts connected with mining life in the west of that county. By reading Mr. Ballantyne's admirable story a very large amount of knowledge concerning Cornish mines may be acquired, whilst from the fact of the information being given in the form of a connected narrative it is not likely very soon to be forgotten. The book contains, amongst numerous other things of interest, a good account of the under-sea workings of the celebrated Botallack Mine, and some startling sketches of some of the difficulties and dangers encountered in mining; reference is made to some of the more interesting of the numerous Cornish legends, and the cause of mining accidents is graphically portrayed. The humorous account of the managing director and secretary of Wheal Doocm in confidential circumstances, and of the "locals," as well as the accounts of setting-day, tributers, &c., will be read with much pleasure. As a whole the book, which is embellished with some well-executed engravings, is one well worthy of being extensively read.

* "Deep Down: a Tale of the Cornish Mines." By R. M. BALLANTYNE, Author of "The Life-Boat: a Tale of our Coast Heroes," &c. London: James Nisbet and Co., Berners-street.

MANCHESTER ASSOCIATION FOR THE PREVENTION OF STEAM-BOILER EXPLOSIONS.—The chief engineer's report for September, which has been delayed owing to the time occupied in preparing the elaborate tables which accompany it, and which give in a condensed form the result of the Wigan coal trials, which for some time past have attracted so much attention, has just been issued. The importance of these trials is generally recognised, and the facility which is now offered for obtaining in the briefest possible form the conclusions to be drawn from them, will be appreciated by all who are desirous of having a more extensive source of supply for good quality steam coal.

Creditors of the Arni Marble Company (Limited) are required to send the particulars of their claims to Mr. Henry Negretti, of Hatton-garden, the official liquidator, by Dec. 9.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, NOV. 20, 1868.

COPPER.	£ s. d.	£ s. d.
Best selected..p. ton	76 0 0-	77 0 0
Tough cake and tile	74 0 0-	75 0 0
Sheathing & sheets.	78 0 0-	79 0 0
Bolts	78 0 0-	—
Bottoms	81 0 0-	—
Old (Exchange)....	64 0 0-	65 0 0
Burra Burra	80 0 0-	—
Wire.....per lb.	0 0 10½	—
Tubes	0 0 11½	—

BRASS.	Per lb.
Sheets .....per lb.	8½d.-9d.
Wire ..... ,,	8d.- —
Tubes ..... ,,	10¼d.- —

Yellow Metal Sheath.p. lb.	6¾d.-7d.
Sheets ..... ,,	6¾d.-

SPELTER.	Per ton.
Foreign on the spot	£20 12 6 —
,, to arrive..	20 12 6- 20 15 0

ZINC.	
In sheets	£24 10 0- 25 0 0

TIN.	
English blocks	103 0 0
Do., bars (in barrels)	104 0 0
Do., refined.....	106 0 0
Banca	102 0 0
Straits	£100 10 0-101 0 0

TIN-PLATES.*	Per box.
IC Charcoal, 1st qua.	1 6 0- 1 8 0
IX Ditto, 1st quality	1 12 0- 1 14 0
IC Ditto, 2d quality..	1 5 0- 1 6 0
IX Ditto, 2d quality..	1 11 0- 1 12 0
IC Coke.....	1 1 6- 1 2 6
IX Ditto	1 7 6- 1 8 6
Canada plates, p.ton..	13 10 0- —
Ditto, at works	12 10 0- —

IRON.	Per ton.
Bars Welsh, in London	6 10 0- 6 15 0
Ditto, to arrive	6 10 0- 6 12 6
Nail rods	7 0 0- 7 2 6
,, Staffd. in London	7 12 6- 8 10 0
Bars ditto	7 10 0- 9 10 0
Hoops ditto	8 2 6- 9 15 0
Sheets, single.....	9 0 0-11 0 0
Pig No. 1, in Wales..	3 15 0- 4 5 0
Refined metal, ditto..	4 0 0- 5 0 0
Bars, common ditto..	6 0 0- —
Do. mrch. Tyne or Tees	6 10 0- —
Do., railway, in Wales	6 0 0- —
Do., Swed. in London.	10 0 0-10 5 0
To arrive	10 5 0- —
Pig, No. 1, in Clyde ..	2 14 0- 2 19 0
Do. f.o.b. Tyne or Tees	2 9 6- —
Do. Nos. 3,4, f.o.b. do.	2 6 6- 2 7 0
Railway chairs	5 10 0- 5 15 0
,, spikes	11 0 0-12 0 0
Indian Charcoal Pigs, in London, p. ton..	7 0 0- 7 10 0

STEEL.	Per ton.
Swed., in kegs(rolled)..	— - —
,, (hammered)	15 0 0-15 10 0
Ditto, in faggots	16 0 0- —
English, spring	17 0 0-23 0 0
QUICKSILVER (p. bottle)	6 17 0- —

LEAD.	Per ton.
English Pig, com.....	19 0 0- —
Ditto, LB.....	19 5 0-19 7 6
Ditto, WB	21 10 0- —
Ditto, sheet.....	20 0 0- —
Ditto, red lead	21 0 0- —
Ditto, white	27 0 0-30 0 0
Ditto, patent shot.....	22 0 0-22 10 0
Spanish.....	18 5 0-18 7 0

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—The excitement incident to the general election which has been taking place this week has to a certain extent somewhat interfered with the usual course of business, as most parties have had their attention partially withdrawn from commercial affairs to attend for a time at least to political ones, in which few persons have not felt a deep interest. Now, however, that it is so far over, we may expect that attention will be once more directed to accustomed business. In consequence of these events the Metal Market has been rather quiet during the week, and business has not been quite so active as in all probability it would otherwise have been. However, as orders from abroad are not influenced by events passing here, they may have been duly received, although merchants may have been too much occupied with other matters to attend to the giving of them out for execution. Next week, however, we have no doubt that the improved feeling which has arisen in the market will again develope itself. After remaining throughout the year at 2 per cent., the directors of the Bank of England, at their weekly meeting on Thursday, raised the Bank rate of discount to 2½ per cent. This had been anticipated, as the improved state of business and the greater demand for money were sure to render necessary an advance in the rate of discount, which had for so long a period remained at so low a point, and should the present improvement continue it is by no means improbable that we shall see the rate advanced another ½ per cent. ere long; even then it would be so low that it would not in any way interfere with the progress of trade.

COPPER.—The market is, if anything, a little firmer, and there is less disposition on the part of smelters to sell at the prices they have lately done. There is also a better enquiry for Chili bar, and considerable sales have taken place for parcels on the spot at 69*l.* 10s., and for arrival at 70*l.*

IRON.—In Staffordshire there is every reason to regard the condition of the trade as satisfactory. The cessation of orders for shipment to the Baltic has not sufficed to prevent the continuance of a good demand, and a steady trade during the winter is confidently anticipated, with an active demand as soon as spring commences. Advices from the United States hold out hopes of considerable requirements for that country. Manufacturers are now indisposed to take orders far in advance based upon present prices. In Welsh the rail mills continue busier than they have been for a long time, and this will tend to allay the fears lately entertained as to there being sufficient orders to keep hands employed with regularity after the shipping season of the northern ports had been closed. Prices remain firm, and several makers have refused to accept contracts for delivery next year at present prices. Home enquiries are more encouraging; large quantities are still being shipped to South America, and there are several good orders for that country remaining on makers' books. To the United States shipments are steadily increasing, the total sent during the present month being 14,098 tons. In Swedish iron there is not much doing at present. In Scotch pig-iron an improved business has been done during the week, and the price at one time went up to 54s. cash; it afterwards, however, receded to 53s. 9d. cash, and 53s. 10d. one month.

LEAD.—The market has been rather quiet during the week, and no transactions of importance have occurred. Prices are a trifle easier.

TIN.—The market for Straits has remained steady, although there has not been quite so much activity. Business has been done at 100*l.* 10s. to 101*l.* cash, and 102*l.* 10s. with two or three months prompt. English continues tolerably firm, at smelters' prices.

SPELTER.—Although there has been little activity in the market, yet prices remain moderately firm. The present quotation for parcels on the spot is 20*l.* 12s. 6d.

TIN-PLATES.—The extensive make at the works keeps prices down, and until the requirements of buyers show a considerable increase no substantial improvement in quotations is likely to be realised.

STEEL and QUICKSILVER remain without alteration.

THE COPPER TRADE.—Messrs. Pitcairn-Campbell and Co. (Liverpool, Nov. 14) write—Holders of Chili bars having freely met buyers, considerable transactions have taken place since our last, at however a reduction of 30s. to 40s. per ton. The market closes firmly at our quotations—67*l.* 10s. to 68*l.* for bars; 72*l.* to 73*l.* for ingots; 14s. for ore and regulus; and 14s. 6d. to 15s. for Barilla. Business transacted during the fortnight comprises on the spot here, 1355 tons bars at 67*l.* to 68*l.*; 225 tons ingots, at 71*l.* to 72*l.*; 170 tons regulus, at 14s.; and 6 tons Barilla, at 15s. On the spot, Swansea, 260 tons bars, at 67*l.* to 68*l.* At the Swansea Ticketing, 2159 tons ore were sold, average produce 15¾ per cent., average price 13s. 9d. per unit. The arrivals here during the fortnight from West Coast, S. A., have been—Pacific, from Colon, 26 tons Barilla; Santon, from Lota, 225 tons bars, 225 tons ingots; Spirit of the Morning, from Valparaiso, 900 tons ores, 93 tons bars; Glencoyne, from Lota, 400 tons bars, 200 tons ingots; Chilian, from Colon, 40 tons Barilla; Nauphante, from Valparaiso, 170 tons regulus, 224 tons bars. At Swansea, Capricorn, from Guayacan, 298 tons ingots, 144 tons Barilla. The stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, are—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool	1125	650	6440	1275	439
Swansea	2061	2879	1329	54	238
Total	3186	3529	7769	1329	677

Representing about 11,800 tons of fine copper, against 8600 tons Nov. 15, 1867; 10,200 tons Nov. 15, 1866; and 8700 Nov. 15, 1865.

The Board of Trade returns for the United Kingdom show the following exports of copper for the nine months ending Sept. in the following years:—

	1868.	1867.	1866.
Manufactured copper .....Tons	19,793	19,625	16,425
Unmanufactured ditto	5,980	6,376	4,641
Foreign ditto.....	13,387	10,590	10,724
Total tons	39,160	36,591	31,810

Messrs. Vivian, Younger, and Bond (Nov. 20)—There has again been a fair business in West Coast produce, not again in consequence of importers giving way, but from buyers increasing their limits. In the whole, about 550 tons of bars have been taken off at 68*l.* for Lota, and 68*l.* 10s. for Urmenita spot, whilst good brands, to arrive, have commanded, first 69*l.*, and as we close 70*l.* Of ingots, 200 tons Urmenita were sold at 73*l.*, and 80 tons Lota fetched 71*l.* A cargo of regulus has been quitted at 14s. per unit. The principal cause of the improvement is that buyers who were holding back in the expectation of heavy charters being advised for the first fortnight in October from the Chilian ports amended their offers as soon as it was known that they amounted to only 1080 tons—360 tons of bars, and 720 tons of fine copper in ores and regulus. Importers have, consequently, raised their asking prices, they having refused 69*l.* for Lota bars; indeed, there are very few parcels of bars to be had, and the market wears a firm appearance.

Messrs. James and Shakspeare—Another sale of regulus, to arrive in Liverpool, has been made at 14s. per unit, and no raw material is to be had by private contract under this figure. Within the last day or two a sudden demand sprung up for Chili produce, and about 900 tons bars and ingots were taken at better prices than were obtainable the week previous; the sales made were chiefly of Urmenita, at 68*l.* 10s. for bars, and 73*l.* for ingots, whilst Lota ingots only realised 71*l.* per ton. It is difficult to fix either buying or selling quotations at present, most parcels being held for extreme rates compared with those offered by buyers, and even at our highest list prices no large lots could be obtained. On the other hand, Australian and English sorts are quiet; in the former the only transaction reported was in Burra at a trifle under 79*l.* 10s. per ton, whilst the demand for the latter is exceedingly dull, neither the home nor the export trade being in the market, except for very moderate quantities. The Chili mail was telegraphed on the 16th inst., giving the charters for the first half of October at 1050 tons pure copper, of which about 420 tons are in bars, and 630 tons in ore and regulus.

COAL MARKET.—The fresh arrivals this week number 127 ships. All kinds of coal have been in steady request, at last week's quotations. Hetton Wallsend, 19s. 6d. per ton; Haswell Wallsend, 19s.; Hartlepool Wallsend, 18s. 3d.; Elliot's Wallsend, 18s. 3d.; Eden Main, 16s. 6d.; Hetton Lyon's Wallsend, 16s. 6d.; Tunstall Wallsend, 16s. 6d. Unsold, 14 cargoes; 10 ships at sea.

EXPORTS OF COAL.—By the Monthly Circular of Messrs. Higginson, Liverpool, we learn that the quantity of coal exported in October was 929,364 tons, against 986,852 tons in the corresponding month of 1867, showing a decrease of 57,488 tons. The particulars are—From the Northern Ports, 412,494 tons; Yorkshire, 41,094 tons; London, 7934 tons; Liverpool, 60,696 tons; Severn Ports, 311,040 tons; and Scotch Ports, 96,106 tons. The increase was—Yorkshire, 4452 tons; Severn Ports, 611 tons; Scotch Ports, 20,699 tons. The decrease—Northern Ports, 49,225 tons; London, 1827 tons; Liverpool, 32,198 tons. Total, Jan. to Oct., 8,588,339 tons; corresponding month last year, 8,282,087 tons: showing an increase of 306,252 tons.

The elections seem to have occupied men's minds this week to the exclusion of almost everything else, and we have nothing particularly new to report in the MINING MARKET, either in the way of business or of change in prices. The standard for copper ore was up on Thursday 1*l.* 16s. The mines mostly dealt in have been West Chiverton, Prince of Wales, Wheal Chiverton, Marke Valley, Chontales, East Grenville, Great Laxey, Great Wheal Vor, Wheal Seton, West Seton, West Frances, South Condurrow, and a few others. Chiverton Moor, 6¼ to 6½; Chontales Gold, 2½ to 2¾; Cook's Kitchen, 11½ to 12; Drake Walls, 14s. 6d. to 16s. 6d.; East Basset, 8 to 9; East Caradon, 4⅞ to 5⅛; East Lovell, 8¼ to 8¾; Frontino and Bolivia, 9s. to 11s.; Great Laxey, 20½ to 21½; Great North Laxey, ½ to ¾; Great Wheal Vor, 12 to 13; Herodsfoot, 44 to 46. Prince of Wales, 36s. to 37s. (ex div.); at the quarterly meeting, held on Thursday, the accounts showed a profit on the three months of 678*l.* 9s. 1d., and a balance of assets over liabilities, charging up every liability of the company to the end of September, of 2015*l.* 5s. 3d. Out of this a dividend of 1s. per share (634*l.*) was declared, leaving a balance in hand of 1381*l.* 8s. 3d. The October ores sold on the day of the meeting for 657*l.*, including carriage, were not credited in the above accounts, and against them will have to be charged the month's cost, including about 25*l.* for extra pumps, &c. The report states that the 65 fathom level end is worth 25*l.* per fathom; west, 10*l.* The total points in operation at the mine are valued at 114*l.* per fathom. The reserves have been estimated at 15,000*l.*, and more ore has of late been discovered than has been taken away. Marke Valley, 9 to 9½; New Lovell, 20s. to 22s. 6d.; North Crofty, 1½ to 1¾; North Roskear, 11 to 12.

East Grenville, 3¾ to 4, call paid; at the meeting, held on Monday, the accounts showed a balance against the company of 656*l.* 7s. 9d., and a call of 2s. per share was made; the 55 fathom level, east from cross-course, is valued at 2½ tons per fathom; the 45 has been driven 15½ fms., and cannot be far from the lode; the agents report that, "seeing the great similarity in the character of the ore and the lode to those which have been so profitable further east, coupled with the like channel of ground, it is our decided opinion good results will follow." Franks Mills, 3¼ to 3½. "A Shareholder," in last week's Journal, calls attention to a paragraph which he says is liable to mislead the shareholders and our readers. He explains that the ores sold in October were raised prior to September 12, as the buyers of lead ores always take two or three weeks for payment after the sampling. We may add that the buyers of lead ores give a bill from the day of sale, and that the true nature of the Frank Mills accounts were as stated in our article. The ores sold on Oct. 10 were the ores of September, and the costs paid on Sept. 12 were the costs of August. Wheal Buller, 7 to 8; at the meeting, held on Tuesday, the accounts showed a balance against the mine of 482*l.* 3s. 4d., and a call of 25s. per share was made; Hocking's shaft is now down 10½ fms. below the 80, and the lode averages 12*l.* per fathom; there are 58 men employed on tutwork, and 31 on tribute; the tin returned for the three months realised 1388*l.* 19s. 1d.; copper sold, 193*l.* 5s. 5d. Yudanamutana, 2⅛ to 2⅜; Caldbeck Fells, 11s. to 13s. Don Pedro, 4⅛ to 4⅜; the advices just received show a profit of 7046*l.* on the month.

Taquaril Gold, par to ¼ prem.; North Treskerby, 67 to 87; Providence Mines, 25 to 27; Redmoor, 3s. to 5s.; South Condurrow, 1 to 1⅛; South Darren, 1½ to 1¾; Stray Park, 6 to 7; Tincroft, 16 to 17; West Basset, 20s. to 30s.; West Caradon, 2 to 3; West Chiverton, 62 to 64; West Drake Walls, 7s. to 8s.; West Frances, 34 to 36; West Seton, 175 to 185; Wheal Chiverton, 4¼ to 4½; Wheal Crebor, 8s. to 10s.; Wheal Grenville, 1⅜ to 1⅝; Wheal Mary Ann, 19 to 20; Wheal Seton, 50 to 52½; Wheal Trelawny, 7 to 8; Wheal Uny, 3 to 3¼. West Prince of Wales, 8s. to 10s.; some nice copper ore has been broken from the 16 fm. level end west, on south lode. Devon Great Consols, 370 to 390; the directors at a meeting on Friday declared a dividend of 5*l.* per share (5120*l.*), arising from profits on sales of copper ores sampled in August and September: after payment of dividends there remains in hand 12,397*l.* 3s. 9d.

The Market for Mine Shares on the Stock Exchange, during the week, has been active, especially for Brazillian and foreign descriptions; the better class of dividend-paying British mines have also commanded attention. Don Pedro shares have further risen to 3⅜, 3½ prem.; the profit on the month's working is upwards of 7000*l.* St. John del Rey shares continue without animation. Anglo-Brazilian, par to ¼ prem. Rossa Grande, ½ to ⅝ prem.; Capt. Treloar left by the last mail for Brazil. Frontino shares have had a heavy fall, being last quoted 6s. 6d., sellers. Taquaril, par to ¼ prem.; General Brazilian, 1-16th to ⅛ prem. Chontales shares are without change, 2¼ to 2⅜. Port Phillip shares are firm, at ⅞ to 1 prem. United Mexican, 1⅞ to 2⅛; Yudanamutana, 2⅛ to 2⅜. Great Laxey shares maintain their late rise, 20½ to 21, and the report from the mine is very favourable. West Chiverton, 61 to 62; the bottom level is opening up rich. All other points maintain their last reported value. The dividend on the 27th will be 2*l.* per share. Chiverton shares have been steady, at 4¼ to 4⅜. Mineral Bottom, 2⅜ to 2⅝; the rich course of ore discovered in Chiverton, and rich towards Mineral Bottom, is now being opened on in Mineral Bottom, active operations having been commenced. Glan Alun, 12s. 6d. to 13s. 6d.; the shaft is cut down to within about 15 fms. of the bottom level, and in about a fortnight's time sinking below will be commenced, and the rich courses of lead cut open. The cutting of the Thorntree lode is daily expected. At Rhosesmor the courses of ore in the western part of the mine have improved. Prince of Wales shares are flatter, at 36s. 6d. to 37s. 6d., ex div. Great Wheal Vor, 12 to 12½. Marke Valley and East Caradon shares are less firm after the late rise. At the close foreign descriptions are animated.

IRISH MINE SHARE MARKET.—Making fair allowance for the intense excitement created throughout Ireland by the elections, more particularly the important ones of the city, county, and University of Dublin, which, of course, most affected business in our metropolis, we may say that mining shares have received a larger amount of attention than we had a right to expect, no day for the last two weeks having passed over without transactions taking place in one or more of the mines quoted on our Exchange. But while sellers were generally anxious to do business, buyers were watching only for opportunities to secure such bargains as might offer themselves, and thus the prices, occasionally fluctuating strongly, yielded to the preponderance of sellers. The decline has been heaviest in Wicklow Copper Mining Company shares, they having been parted with rather freely during the last two days, at 10*l.* to 10*l.* 2s. 6d. (2*l.* 10s. paid), being a fall of fully 30s. per share since the 7th inst. They leave off, however, with a tendency to recovery. Mining Company of

Ireland shares dropped during the same period from 14*l.* (7*l.* paid.) to 13*l.* 10s., and leave off rather weak. General Mining Company for Ireland shares, of which the previous price was 1*l.* 12s. 6d., were since dealt in at 30s., being a reduction of 2s. 6d. per share. Connorree shares were more fortunate than others, they having gone up from 3s. 9d., their lowest recent market value, to 4s. 6d., leaving off in request. Killaloe Quarry shares (1*l.* paid) have just been dealt in at 17s. 6d. to 17s. 3d.

The Earl of Carysfort, for a long time known as Admiral Proby, the owner of extensive mining property in the county of Wicklow, having recently died in his 86th year, at his seat, Elton Hall, Northamptonshire, his title and valuable estates devolve upon his eldest surviving son, Granville Levison, now fourth Earl of Carysfort, born in 1825. His lordship has been M.P. for the county of Wicklow since 1858, and is a Privy Councillor.

At the Truro Ticketing, on Thursday, 3637 tons of ore were sold, realising 13,524*l.* 15s. The particulars of the sale were:—Average standard, 106*l.* 7s.; average produce, 6¼; average price per ton, 3*l.* 14s.; quantity of fine copper, 221 tons 5 cwts. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Oct. 22 ..	3156	£104 6 0	6¾	£4 5 6	12s. 8½d....	£63 10 0
„ 29 ..	1741	98 4 0	7⅞	4 19 6	12 8	63 6 0
Nov. 5 ..	1717	100 13 0	7½	4 9 6	12 5½	62 6 6
„ 12 ..	1007	99 6 0	6⅞	4 0 6	11 9	58 11 0
„ 19 ..	3637	106 7 0	6⅛	3 14 0	12 2½	61 0 0

Compared with last week's sale, the advance has been in the standard 1*l.* 16s., and in the price per ton of ore about 2s. 6d. Compared with the corresponding sale of last month, the decline has been in the standard 12s., and in the price per ton of ore about 8d.

The directors of the Devonshire Great Consolidated Copper Mining Company at their board meeting, held yesterday, declared a dividend of 5120*l.*, being 5*l.* per share, arising from profits on sales of copper ores sampled in the months of August and September last. After payment of the same, there remains in hand a balance of 12,397*l.* 3s. 9d. in cash, ore bills not at maturity, and reserve fund, applicable to the general purposes of the company.

At the Prince of Wales Mine meeting, on Thursday (Mr. J. Y. Watson, F.G.S., in the chair), the accounts showed a balance of assets over liabilities of 2015*l.* 5s. 3d. The profit on the three months' operations was 678*l.* 9s. 1d. A dividend of 1s. per share was declared. Details will be found in another column.

At the Princess of Wales Mine meeting, on Nov. 12 (Mr. Thomas Horswill in the chair), the accounts showed a debit balance of 429*l.* 3s. 2d. A call of 1s. per share was made. Messrs. T. Nicholls, J. Pearce, and W. Rickard were appointed the committee of management.

At Wheal Buller meeting, on Tuesday (Mr. Henry Milford in the chair), the accounts for the three months, ending with Sept. cost, showed a debit balance of 482*l.* 3s. 4d. A call of 2s. per share was made. The agreement between Copper Hill and Wheal Buller was approved, and entered in the cost-book. The committee of management were re-elected. The report stated that the pitches throughout the mine are producing their usual quantity of tin; and, looking at the present appearances, the agents think they will be able to return about the same quantities of mineral as for some time past.

At Treweatha Mine meeting, on Monday (Mr. George Harris in the chair), the accounts showed a debit balance of 2679*l.* 1s. 6d. A call of 10s. per share was made. The agents in their report stated they were pleased to say that both ends and stopes are looking much better, and they hoped to raise a good parcel of ore for the next sampling. The tribute pitches are looking favourable, producing the usual quantities of lead, and the men getting good wages at from 12*l.* to 13*l.* per ton.

At the Tamar Valley general meeting, on Monday (Mr. J. Brunskill in the chair), the accounts showed a balance of liabilities over assest of 1171*l.* 18s. 6d. A call of 4s. per share was made. Details in another column.

At New Pembroke Mine meeting, on Nov. 10, the accounts for the four months ending August showed a debit balance of 365*l.* 17s. 1d. A call of 3s. per share was made. Capts. F. and J. Puckey reported that the mine continues to improve in depth. There is a splendid lode gone down below their bottom level (the 75) for upwards of 40 fms. in length, in places worth fully 40*l.* per fathom, and from the dip of the great cross-course the tin ground is still lengthening in depth. Their surface operations are progressing satisfactorily.

At the Port Phillip and Colonial Gold extraordinary general meeting, on Thursday (Mr. H. Moor in the chair), the special resolution altering the constitution of the company was adopted. Details in another column.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT a decrease in the "notes issued" of 1,027,535*l.*, which is represented by a corresponding decrease in the "coin and bullion" on the other side of the account. In the BANKING DEPARTMENT there has been an increase in the "public deposits" of 285,771*l.*, in the "seven day and other bills" of 10,303*l.*, and in the "rest" of 7474*l.*: together, 303,540*l.*, and a decrease in the "other deposits" of 486,144*l.*=182,696*l.* On the asset side there was shown a decrease in the "Government securities" of 184,437*l.*, and an increase in the "other securities" of 556,817*l.*=372,380*l.*, showing a total decrease in the reserve of 554,976*l.*

The Trinidad Petroleum Company (Limited) will hold an extraordinary meeting on Monday, when a resolution will be proposed in favour of winding-up the concern voluntarily.

The CORNWALL HEMATITE COMPANY (Limited) seems destined to occupy an important position, both in a commercial and a profitable sense. The working arrangements of the company are, we understand, going forward in a very satisfactory manner, while the value of the property is, according to a letter from a correspondent in this day's Journal, placed beyond doubt.

AUSTRALIAN GOLD MINING.—We understand that the development of the auriferous alluvial deposits and quartz veins in Ballarat, the largest of the gold fields of Victoria, Australia, are likely to receive a great impetus by the introduction of improved methods of working, which are rendered necessary in consequence of the gold lodes of that district becoming more defined and deepening from the present surface, thereby necessitating the introduction of more powerful machinery, capital, &c., than has hitherto been used. Mr. William Collard Smith, who is the Chairman of the Band of Hope and Albion Consols Company, the largest gold mine in the world, is now in England, authorised to purchase machinery suitable to the growing requirements of the large gold field he represents; and he is also duly empowered to offer a portion of the interests in one of the largest gold mining companies (adjoining the Band of Hope), with the view of getting the co-operation of English capital for the more rapid development of the continuation of the principal gold alluvial leads or deposits and quartz veins in the Ballarat gold fields. We trust to publish details shortly of the actual results obtained from this wonderful district.

MINING IN BRAZIL—THE DON PEDRO COMPANY.—As will be seen by the advices which appear in another column, the profit realised during September amounts to 7046*l.*, which, added to the profit returned since January, makes a total of no less than 41,401*l.* Of this there has been already divided among the shareholders 17,564*l.*, leaving (with the amount which stood at the credit of profit and loss at the beginning of the year) an undivided balance of 25,114*l.* The reserve fund amounts to 3500*l.* At the meeting, on Tuesday, it will be proposed to declare a dividend of 3s. 6d. per share for the three months, being at the rate of 100 per cent. per annum upon the paid-up capital. After the payment of this dividend 4405*l.*, and the profit for September, will be carried forward towards the next quarterly division.

FRONTINO AND BOLIVIA (SOUTH AMERICAN) GOLD MINING COMPANY.—Among the rumours circulated yesterday, with reference to the present position of this unfortunate company, were that the Chairman, managing director, and Mr. Ambrose Moore (who has been upon the board from the commencement of the company, and was also connected with the previous undertaking), have resigned their seats; and that Chancery proceedings have been threatened. Of course, these rumours require substantiation.

CWM DWYFOR COPPER AND SILVER-LEAD MINES.—The shares of these mines are being allotted as they are applied for, and as there will, therefore, be no formal allotment the general public will probably be disappointed of the shares they may expect to get when the value of this remarkable property shall be more fully appreciated. There seems every probability of this new mine realising within the next six months double or treble its present nominal value. From accounts received this week, it appears that the works are progressing satisfactorily at the mine, and that we may soon expect to hear of the lode being intersected in the 12 fm. level; this being accomplished, there can be little doubt of large and continuous returns of copper, and the augmentation of the profits to a large extent from the working of the backs above the 12 fm. level. The opinion of an experienced Cornish mining agent, expressed only on Thursday last, respecting this property was to this effect:—That if it were possible to show anything like it in Cornwall, the mine would readily sell for 150,000*l.*

But, as was at the same time remarked, in Cornwall ores of a similar quality are not to be found, and lodes cannot there be worked without machinery. The contrast is, therefore, manifest, and most important. The same mining authority remarked that the ore more nearly resembled the rich Cobre ores than any he had ever seen. The conclusion is obvious.

FACE-HARDENED RAILS.—The invention of Mr. H. CONYBEARE, of Duke-street, Westminster, consists in chilling the surface of the rails, by placing them after coming from the rolling-mill so that water may be brought in contact with the whole or upper portion only of the rail. Arrangements may be made for the purpose of keeping the rail in proper shape and position whilst under treatment.

NEW GUNPOWDER.—Mr. Hahn's new gunpowder consits of—chlorate of potash, 367·5 parts; sulphuret of antimony, 168·3 parts; charcoal, 18 parts; and spermaceti, 46 parts. The antimony, charcoal, and spermaceti are mixed together, and kept separate from the chlorate of potash until the powder is required for use, when 29 parts of the mixture are intimately mixed with 46 parts of the chlorate.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending Nov. 15 amounted to 9372*l.* 10s.

DON PEDRO NORTH DEL REY GOLD MINING COMPANY (LIMITED).

INTERIM DIVIDEND.

Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the company will be HELD at the London Tavern, Bishopsgate-street, on TUESDAY, the 24th day of November, 1868, at Two o'clock, to authorise the directors to PAY an INTERIM DIVIDEND.

The directors will propose the payment of 3s. 6d. per share for the three months ending 30th September, 1868, being at the rate of 100 per cent. per annum, the sum of £4405, and the profit for September being carried forward for the quarter ending 31st December.

The Transfer-books of the company will be closed from the 16th to the 24th November, both days inclusive.

By order of the Board,
JOHN E. DAWSON, Secretary.

52, Moorgate-street, November 14th, 1868.

MARIQUITA MINING COMPANY (LIMITED).—Notice is hereby given, that the HALF-YEARLY ORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the London Tavern, Bishopsgate-street, on MONDAY, the 23d inst., at Two o'clock precisely.

By order,
C. O. ROGERS, Secretary.

6½, Austinfriars, London, E.C., November 13, 1868.

LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
Nov. 9—	Prince Arthur Cons.	36	£14 1 6	Treffry's Executors.
—	ditto	9	11 1 6	ditto
17—	Dylliffe	64	12 5 6	A. Eyton.
—	Bronfloyd	60	12 19 6	Runcorn Smelting Co.
18—	Stiperstones	85	11 18 0	Sims, Willyams, & Co.
19—	Wheal Mary Ann ..	62	24 3 6	Michell and Son.
—	ditto	46	16 8 6	ditto.

BLACK TIN.

Date.	Mine.	Ts. c. q. lbs.	Price p. ton.	Amount.	Purchasers.
Nov. 14—	Kitty (St. Ag.).	7 3 1 26 ..	£58 2 6 ..	£ 416 19 10—	—
—	Wheal Uny....	11 13 0 19 ..	60 3 10 ..	681 0 11—	—

COPPER ORES.

Sampled Nov. 4, and sold at the Royal Hotel, Truro, Nov. 19.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Devon Great Consols.	133	£4 17 6	Wheal Crelake	44	£3 12 6
ditto	124	4 11 6	ditto	41	2 8 0
ditto	122	2 9 0	Bedford United.....	78	2 12 0
ditto	121	4 14 6	ditto	64	2 14 6
ditto	120	4 17 6	ditto	48	3 5 6
ditto	116	4 11 6	East Caradon	82	3 18 0
ditto	109	4 14 6	ditto	70	5 2 6
ditto	107	4 12 0	ditto	38	1 12 6
ditto	106	5 2 6	West Maria & Fortes.	65	2 12 6
ditto	101	3 8 6	ditto	60	2 16 6
ditto	82	2 1 6	ditto	50	5 1 6
ditto	60	1 8 0	Prince of Wales.....	42	5 16 6
ditto	57	1 18 0	ditto	41	3 15 6
ditto	56	1 14 0	ditto	40	5 14 0
ditto	55	2 11 0	Wheal Friendship ..	68	1 3 6
ditto	48	2 16 0	ditto	50	6 9 6
ditto	43	3 4 0	Gunnislake (Clitters).	49	3 8 6
ditto	41	2 7 0	ditto	26	4 5 6
ditto	35	2 11 6	Kelly Bray	50	3 13 6
ditto	24	12 9 0	ditto	16	9 11 0
ditto	23	0 15 0	Cawsand Vale	45	2 14 0
Marke Valley	92	2 18 6	ditto	20	6 10 6
ditto	80	5 6 6	Wheal Crebor.....	34	3 9 0
ditto	79	8 9 0	ditto	29	3 7 6
ditto	71	2 10 0	East Russell	21	3 4 6
ditto	54	2 0 6	ditto	20	6 0 6
ditto	50	1 2 6	Belstone	37	3 13 6
ditto	47	2 2 0	Caradon Consols	31	1 15 6
ditto	26	2 2 0	Old Gunnislake.....	25	5 5 6
Wheal Crelake	89	2 11 6	Devon and Cornwall..	25	2 3 6
ditto	45	3 3 6	Collacombe	12	1 8 6

TOTAL PRODUCE.

Devon Great Con.	1683	£6470 16 6	Kelly Bray	66	£336 11 0
Marke Valley....	499	1859 1 0	Cawsand Vale	65	252 0 0
Wheal Crelake ..	219	629 19 0	Wheal Crebor	63	215 3 6
Bedford United..	190	534 8 0	East Russell.....	41	188 4 6
East Caradon....	190	740 6 0	Belstone	37	135 19 6
West Maria, &c..	175	593 17 6	Caradon Consols..	31	55 0 6
Prince of Wales..	123	637 8 6	Old Gunnislake ..	25	131 17 6
Wheal Friendship	118	403 13 0	Devon & Cornwall.	25	54 7 6
Gunnislake, &c...	75	278 19 6	Collacombe	12	17 2 0

Average standard ..... £106 7 0 | Average produce 6⅛
Average price per ton £3 12 0
Quantity of ore ..... 3637 tons | Quantity of fine copper.. 221 tons 5 cwts.
Amount of money £13,524 15 0
LAST SALE.—Average standard..... £ 99 6 0—Average produce..... 7⅛
Standard of corresponding sale last month, £104 6 0—Produce, 6¾.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
Vivian and Sons	607	£2345 5 3
Freeman and Co.	215	761 11 0
Grenfell and Sons	384	1555 19 1
Sims, Willyams, and Co.	336	2132 6 0
Williams, Foster, and Co.....	631	2483 15 6
Mason and Elkington.....	189	579 8 3
Bankart and Sons	142	386 2 6
Copper Miners' Company	312⅔	830 4 4
Charles Lambert	378	1289 5 0
Sweetland, Tuttle, and Co.	356⅔	1035 10 10
Goole Alum Smelting Company (Limited)	85⅓	124 19 3
Total	3637	£13,524 15 0

Copper ores for sale at Tabb's Hotel, Redruth, on Thursday next.—Mines and Parcels.—Clifford Amalgamated 6·2—South Caradon 541—Glasgow Caradon 300—Poldice Mines 224—Phœnix Mines 205—Wheal Rose 184—North Treskerby 157—Craddock Moor 101—West Caradon 92—Tresavean 70—West's Ore 64—Treffry's Regulus 44—Old Pembroke 3.—Total, 2587 tons.

Copper ores for sale at Tabb's Hotel, Redruth, on Thursday week.—Mines and Parcels.—Wheal Seton (Pendarves) 757—West Seton 585—West Tolgus 361—South Crofty 310—Clifford 251—Wheal Basset 250—East Pool 122—Tincroft 94—Carn Camborne 60—East Basset 31—Dolcoath 8—South Basset 8.—Total, 2837 tons.

Notices to Correspondents.

COLLIERY OPERATIONS.—Can any of your correspondents inform me what description of tubes are used in the mines or collieries for drawing off the water, and whether they are in any respect with closed ends, and how placed for this purpose? Are there closed tubes used in borings to carry off the water? What kind of tools are used in boring to ascertain where coal is likely to be found?—INQUIRER.

"Mentor" (Dudley).—It was very mean conduct certainly—indeed, scarcely to have been expected in a respectable paper; but the matter is hardly worth public notice. It will be rightly judged by many who read it.

PENDARVES UNITED MINES.—We have received several letters in reference to the unfortunate position of this company. The general impression appears to be that a valuable property has been sadly mismanaged; but the shareholders themselves have now a duty to perform: knowing the state into which the concern has been placed, they should unite, and in a combined effort remedy the evil complained of by change of management—replacing it by a clear system of careful accounts, with efficient economical working arrangements. It is useless, and not fair to expect others to do that which is clearly a responsibility of their own. One shareholder writes—"I hope you will agitate the question till justice is done, that a grand property may be rescued from ruin, and the authors of its present calamitous failure be exposed, and, if need be, punished." Let a meeting of adventurers be convened, at which all matters in dispute can be properly enquired into, and we will publish the proceedings.

PESTARENA UNITED GOLD MINING COMPANY (Limited).—Can any of your readers give a reason for the great decline in the shares of this company in the last fortnight? If no change has taken place in the position of the mines since Mr. Arthur Dean's report was issued, surely the shareholders who sell at the present terrible discount are throwing away their property, and putting difficulties in the way of its management. No doubt the money spent by the late manager on mills unsuitable, as Mr. Dean says, for crushing the ore and amalgamation may account for a certain sum wasted, but not for such a loss as the present prices of the shares indicate. What do other such mines in the same district sell at? This shareholders who may have been out in that part of Italy may know.—A SHAREHOLDER.

MINING IN MONTGOMERYSHIRE—THE CAPEL BANHALOG, OR EAST MID-WALES LEAD MINING COMPANY.—As a shareholder in this company, I received, a few weeks since, a printed copy of a report by our manager, which informed me that a discovery of considerable importance had just been made—so much importance, in fact, did our manager attach to it that he did not hesitate to state that it was the most important discovery made in the district for many years. When I inform my co-shareholders that the district embraces such properties as the Van Mine, the Brynpostig, the Plynlimmon, and others of a like character, the value of the discovery referred to cannot be over-estimated. But my object in communicating with you, Sir, it to lodge what I conceive to be a well grounded complaint against our directors for not having apprised us of the *extent* of the discovery, and whether or not it still continues of the same encouraging character as that indicated in the report of the manager. Although I am fully aware that the position of the gentlemen composing the board places them "above suspicion," yet there is no doubt that by their reticence they have allowed the shareholders to be laid open to, at least, the danger of being unfairly deprived of their interest by those perpetual "private circular" scribes, who are ever proffering advice for the benefit of the public. I need only refer to one circular, as a fair sample of the rest: it says—"Should I be disposed to part with my shares, I can do so at a slight advance upon their par value." I hope the directors will take this as a friendly hint, and not continue to "hide their light under a bushel."—A SHAREHOLDER.

CALDBECK FELLS.—"A Shareholder" asked, in the Journal of Nov. 7, whether it was true that some important discoveries had been made in this mine, with which the shareholders were not so fully acquainted as the value of those discoveries demanded at the hands of the executive. The reply by the secretary (Mr. Lainton), which appeared in last week's Journal, was to the effect that there is no truth whatever in the allegations made by "A Shareholder." So far, however, as I was able to judge from the purport of "A Shareholder's" letter, the discoveries referred to may have been made, and yet be altogether unknown to Mr. Lainton, although the secretary of the company. This being a question of vital importance to all who, like myself, paid a premium for their shares, it would be at least satisfactory if Mr. Lainton would, through the Journal, inform us upon what authority he has stated that "there are no grounds whatever for any part of the statement" put forward by "A Shareholder;" and whether also Mr. Lainton had the authority of the *whole* of the directors in so writing—in other words, whether the statement was that of the board made through the secretary, or did it emanate from him upon his sole authority?—ANOTHER SHAREHOLDER.

SCALE FOR ADVERTISEMENTS.—To avoid the necessity of frequent application, we may state our charge for general advertisements is—for six lines and under, 4s.; per line afterwards, 8d. Average, twelve words per line.

THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, NOVEMBER 21, 1868.

IRON FOR RAILWAYS.

The past year has been one of considerable activity in the manufacture of railway plant alike in this country and in Belgium; but the future promises to be a time of much more activity in this department of the iron trade. We all know how extensively Russia is engaged in increasing railway facilities. Australia has also been adduced with much prominence as likely to require heavy lots of rails. India will be a growing customer for some time to come. The wants of British America will be sensibly felt, but Russia and the United States of America will be the largest customers.

The next session of Congress will find itself pressed upon every hand to subsidise private effort in the making of State railways. The general Government of the United States have found it to their advantage to assist new companies with grants of land. By this means they secured the making of railways through vast unsettled tracts of country. Settlers were thereby encouraged to look in those directions, and the giving away of 1,000,000 acres, for instance, led to the sale of five, which would not otherwise, in all probability, have obtained a market. Ohio, Indiana, Illinois, Wisconsin, and Michigan, in the Western States, give proof of the wisdom of this class of subsidy. The New York correspondent of the *Scotsman* forwards information upon this point which our readers will peruse with much interest. He says—

"In 1840, when there was scarcely 100 miles of railway in either of these States, their aggregate population was 2,924,000. In 1850 they had 2500 miles of railroad, and a population of 4,533,000; and they raised annually 255,636,000 bushels of grain. In the next ten years they had increased their railways to 10,000 miles, their population to 7,000,000, and their cereal products to 415,146,000 bushels. It was in a great measure owing to the wise liberality of the Government in granting donations of land to almost every railway company which applied for it that so many roads were constructed. Since 1850 no less than 66 companies have received these donations of portions of the public domain, and the whole amount of land thus given away amounts to 154,175,000 acres—more than 240,000 miles, an area more than twice as great of that of Great Britain. But of late years these land grants have proved comparatively useless to the companies which received them, owing to the fact that there was difficulty experienced in obtaining the ready money with which to construct the roads. It was a knowledge of this fact that led the Government to advance one step further; and, in the case of the Pacific Railway, to not only bestow a gift of every alternate square mile of land for 20 miles on each side of its entire length, but to lend to it the aid of Government credit also. There are three companies thus favoured, all of which, however, are essentially one—to wit, the Central Pacific, which has a line 726 miles long; the Western Pacific, 120 miles; and the Union Pacific, which, with its branches, has a line of 1581 miles. These roads receive the aid of the Government, in the shape of its bonds, as they proceed with the work of construction, and the whole amount of the subsidy, when the whole 2427 miles are built, will be $60,000,000, on which the annual interest is $3,600,000. This interest the Government pays, but it makes it a charge against the companies to be set against the sums earned by the roads for the transportation of troops, army supplies, and mails. * * * * * * This (he continues) is all very well so far as it goes; the arrangement is a very good one for the companies, and is not a bad one for the Government, since it has frequently paid $3,000,000 and sometimes $5,000,000 per year for the transportation of military stores and munitions across the planes by wagons. But now there are plain indications that at the approaching session of Congress the national Legislature will be importuned to bestow similar favours to those given the Pacific railway companies to no less than 10 other enterprises, the demands of which, if complied with, will involve the grant of $103,000,000 in Government Bonds, at the annual expense of $6,180,000 for interest. Among these projects are two for the construction of other roads to the Pacific coast—one a northern route, reaching the Pacific at Puget Sound; the other a southern route, crossing New Mexico on the 35th parallel. Neither of these projects is at all new—the American press having repeatedly dealt, with somewhat tiresome prolixity, upon them. More has been said, however, of the northern than the southern route, the latter, nevertheless, being at once the most important and the most feasible. It western terminus is to be San Francisco, but instead of striking east, as does the line now under construction, it is to come southward, through the San Joaquin Valley nearly to the southern boundary of California, cross the mountains of the Tejon Pass, where the elevation is but 4000 feet above the sea, and then come eastward to Albuquerque, in New Mexico, from which latter point it would have branches to New Orleans, Little Rock, and St. Louis. The 10 companies which will, in all probability, apply to Congress for subsidies, within the next few months, and the amounts of aid for which each will ask, are as follows:—The Northern Pacific, from Lake Superior to Puget Sound, 1700 miles, $34,000,000; the San Joaquin and Southern, from San Francisco to Albuquerque, 1000 miles, $20,000,000; the Oregon Branch, from Portland, Oregon, to Humboldt Hive, 400 miles, $8,000,000: the Montana Branch, from Virginia City to Salt Lake, 250 miles, $5,000,000; the Kansas Branch, from Fort Wallace to Albuquerque, 500 miles, $5,000,000; the South Pacific, from Springfield, Missouri, to Albuquerque, *via* Fort Gibson, 1000 miles, $10,000,000; the Memphis and Pacific, from Little Rock, Arkansas, to Fort Gibson, 300 miles, $3,000,000; the Cairo and Fulton, from Little Rock to Tyler, Texas, 400 miles, $4,000,000; and the New Orleans and Santa Fé, from Shreveport, Louisiana, to Albuquerque, 1000 miles, $10,000,000.

Hitherto the policy of the Democratic party in America has been opposed to the using of the public money or credit for any purpose other than the ordinary and legitimate channels of Government expenditure, but inasmuch as that party are not now likely to have a great deal of influence in the immediate legislation of the States, it may be confidently assumed that a fair proportion of the 6950 miles of road mentioned above will secure a start by the aid of Government subsidy. The proposers of the several schemes are confident in their ability to construct the lines if only the Government would agree to "take out" the amount of their help in services rendered in the transporting of the mails and the army. For an equal sum to that obtained from the Government the promoters desire to issue first mortgage bonds, the Government to have only a secondary lien for its security.

Relative to the Australian demand, we note that in the Victoria Legislative Assembly the Loan Bill for the Completion of the Docks and the Water Works, and the Construction of the New Railway in the North-East, has passed the second reading.

Last Thursday the directors of the East India Railway Company accepted tenders for 1830 tons of rails, 2620 tons of chairs, 90 tons of fishing-plates, 40 tons of bolts and nuts, and 245 tons of spikes.

The prospects of employers and employed in the iron trade are decidedly favourable, in respect not only of the railway demand, but in regard, likewise, of various other kinds of civil engineering work; but the means of production are so vast, when the capabilities of Great Britain are supplemented by those of the Continent, that too much haste must on no account be displayed by either in an attempt to make better terms than are now current. Happily, the comparative activity which is now observed upon the Continent has reduced to some extent the severity of the competition which the makers of British iron and machinery were experiencing from that quarter, where slightly better prices are now being got than some time ago prevailed. We have again to use the homily which so fully expresses the prudence of caution in trade matters. To both men and masters we say, "Let well alone." There is reason why we should say it, and in the interest of the trades in which this Journal is in a professional sense so largely concerned we repeat our caution, with a deepening conviction of its wisdom. The very small sum which often determines whether a good order shall come to this country or go to the Continent has been strikingly brought out by Mr. JOHN ROBINSON, of the Atlas Works, Manchester, and to whose testimony in this respect before the Trades Union Commissioners we drew attention a fortnight ago, in the article upon "Our Competitors." A further illustration, by the same authority, will be found in another column, under the head of "English and French Boiler Plates." If our friends will only bide their time a little while longer, employers and employed will alike be able to secure better terms on a comparatively early day.

WAGES IN THE ENGINE TRADES AT HOME AND ABROAD.

Mr. ROBINSON, reverting to the question of Foreign Competition, said to the Trades Union Commissioners—

"I should say that at Creusot the average of the wages of all the men (they employ, perhaps, about 2000) in their engine factory only come to 2s. 11d. per day of 11 hours, whereas in our own works it reaches 3s. 10¾d. for the same number of hours (with us they work 10 hours, but I have calculated it for 11 hours to make it proportionate), and including the piecework balances that we pay it actually reaches 4s. 5¾d., as compared with their 2s. 11d.

Lord ELCHO enquired what difference does that make in the price of an engine?—*It almost doubles the wages paid.*

Mr. MATHEWS: You have taken analogous occupations, and that is the result of the comparison?—That is the result of the comparison.

Mr. HUGHES: You do not want to see wages in England go down to the Creusot level, do you?—Do you speak to me as an employer or as a man?

Whichever way you like; as an Englishman?—*I want to see all Englishmen having better wages.* The operation of my management at Manchester has been this: when we have reduced our artizans in consequence of a diminished trade I have never touched the labourers' wages. I think that the labourers are underpaid, and I think that in some cases the artizans, especially the boiler-makers, are overpaid in proportion. If all the world rises it is nothing to me. That is what Mr. ALLAN may get accomplished, perhaps. The point that we have got to consider is how we can best pay the whole of our population, not the artizans and Unionists only, and how easily we can attain that end; and *if we do not get foreign orders we must close our shops*, and if we do is Mr. ALLAN able to take all the labourers, as well as others, on his books?

Mr. MATHEWS: Although we should all like to see a greater rate of wages paid, is not that controlled in a great degree by competition?—I think that the rate of wages, if let alone by the Unionists, is controlled by demand and supply.

Is not that consideration paramount to any artificial system that you may adopt for regulating wages?—Perfectly. We do not adopt any artificial system.

It is beyond the control of employers or men?—Yes.

However we may try to nullify that law, it will act in spite of us?—I believe in the long run it will.

Mr. ROBINSON handed in to the Commissioners the following:—

TABLE showing the RATES OF WAGES paid in May, 1867, to SKILLED WORKMEN in the towns of MANCHESTER, LEEDS, BRISTOL, and DUNDEE:—

	Manchester. Week of 57½ hours.	Leeds. Week of 58½ hours.	Bristol. Week of 58½ hours.	Dundee.
Fitters and erecters	26s. to 36s.	26s. to 30s.	28s. to 32s.	23s. to 27s.
Turners and borers	26 „ 36	27 „ 30	28 „ 35	15 „ 26
Grinders	30 „ 32	24 „ 26	18 „ 24	—
Pattern-makers	32 „ 34	27 „ 29	28 „ 32	24 „ 25
Coppersmiths	32 „ 33	32	30 „ 36	—
Planers	22 „ 26	21 „ 24	24 „ 32	18 „ 23
Slotters and shapers	18 „ 25	17 „ 21	24 „ 35	16 „ 20
Brass moulders	36 „ 38	30 „ 34	30	26
Iron moulders	36	30 „ 34	28 „ 30	28 „ 31
Ordinary smiths	26 „ 38	26 „ 29	28 „ 32	23 „ 27
Boilersmiths	38	28 „ 32	30 „ 36	—
Boilermakers	36 „ 40	30 „ 36	30 „ 36	—
Riveters	32	24 „ 28	30	—
Helpers	18 „ 20	17 „ 22	15 „ 17	—
Strikers	18 „ 21	16 „ 19	17 „ 20	16 „ 17

ENGLISH AND GERMAN AXLES.

Mr. CHARLES F. BEYER, of the Gorton Foundry, Manchester, when under examination before the Trades Union Committee, at their final sitting, was questioned by Lord ELCHO, and replied as under:—

"I suppose you know the quality of work that is done in Germany, and that which is done in this country?—Yes.

Do you apprehend that the work done in Germany will oust our work from the market?—I think it is doing so every day. For instance, I am a locomotive engine maker. When I came to Manchester, and for years after, we supplied the Continent with locomotives. Now they do not want us, and we can scarcely compete with them.

To what do you attribute that?—Well, they have made very great progress in Germany in proportion.

The labour is cheaper, I suppose?—Evidently labour is cheaper; and there is another matter—that in some branches of manufacture they have outstripped us.

In your own trade?—Yes.

In what branches have they outstripped you?—For instance, in iron and steel it is very clear that they are in advance of us; and I will give you my reasons for saying so. For example, in the way of making steel Mr. KRUPP seems to be doing extraordinary things. I will give you only one instance. I was formerly at SHARP, ROBERTS, and Co.'s, and at that time they were beginning in Germany to manufacture for themselves. Speaking from recollection, I should say that at one of the largest establishments on the Continent, that of BORSIG, at Berlin, they could not make a crooked, that is, a crank-axle, and they began to make their locomotive engines with a straight axle instead of a crank or bent one. That was, probably, in 1837 or 1838. Now things have quite changed. When we want a really good axle we are obliged to send to Germany, they make it of such a superior material.

Mr. ROBINSON on his part supplemented Mr. BEYER'S statement by the yet more convincing remark that his firm had paid a higher price for German than for British axles. To Lord ELCHO, who suggested that it was not the quality of the metal but the process of working that, probably, made the difference, Mr. BEYER replied that in Germany they understand the manufacture of the article better than we do in England, and were, therefore, able to do that which we could not accomplish.

Mr. MATHEWS was naturally jealous for the honour of the British Iron Trade, and remarked by way of question: The crank-axle is made with steel? Yes (responded Mr. BEYER), but it is such a superior quality, and we have not kept pace with KRUPP'S. Mr. MATHEWS: "I want to ask whether the distinction that makes that crank-axle preferable is, that the one is made with steel and the other with iron?—Yes.

That the crank-axle can be made properly with steel and not with iron, and that a better crank is made by KRUPP than can be made by us?—A better one than has been made by us up to this time."

ENGLISH AND FRENCH BOILER-PLATES.

We can do neither masters nor men good by withholding from them light by which to perceive the extent of the progress which their competitors are making. The following, and other extracts, should be read in connection with the article in which that competition was noticed in the *Mining Journal* of a fortnight ago. Mr. ROBINSON, when before the Trades Union Commissioners, was asked by Mr. WILLIAM MATHEWS, ironmaster, of Staffordshire, what were the "au bois" boiler-plates to which he referred in the statement that he had handed to the Commissioners. Mr. ROBINSON replied:—

"They are charcoal boiler-plates. I have made a statement there of the cost of boiler-plates in France, and actually delivered at our works from France, as compared with a similar quality made in England."

The following further questions were put by Mr. MATHEWS, and answers given by Mr. ROBINSON:—

"You cannot make a similar quality in England, can you?—We have a similar quality in this sense, that it corresponds in the minds of engineers with the other.

There are no charcoal boiler-plates made in England, are there?—No; but supposing that you are an engineer, and specify a boiler of a certain quality, we may fairly say that "au bois," the French charcoal plate, is equal to Low Moor, and I say that the French boiler plate we can buy at 26s. per cwt., whereas the Low Moor, a similar size, costs us 30s. per cwt. delivered at Manchester.

If it were not for the imperative character of the specifications which oblige the English locomotive makers to use Low Moor plates, as good a quality might be obtained at 26s. from Staffordshire as you pay 30s. for here?—That I, as a locomotive maker, cannot admit. All I have to say is that locomotive boilers are made in England of that quality at that price. I would most willingly go to France, by permission of the engineer, and get the "au bois," because I have tried it. That is exactly the question which M. Schneider asked me at the French Treaty Committee, whether we always made our boilers of Low Moor, he having in view the manufacture of his own iron. At all events, it is quite clear that we are just on the balance with them as regards competition."

THE ELECTIONS IN STAFFORDSHIRE.

So far as they have gone the elections in Staffordshire are such as to afford satisfaction to the staple interests of that ancient trading county. The results are the more gratifying, because they show the existence of confidence on the part of the working men in those who occupy the position of employers in the branches of industry in which the majority of the voters are engaged. In the south of the county the contests did not altogether pass off without some little excitement.

The contest in the new borough of Wednesbury was the most lively. There, although the success of the member returned was certain and signal from the beginning, yet much vigorous opposition of the rougher kind was threatened from Tipton, in which town resided the candidate who has never had a shadow of a chance of success, for whilst the other two candidates were ironmasters, he was merely a Queen's Counsel. Mr. ALEXANDER BROGDEN, chiefly known in the trade as one of the proprietors of the Tondu Iron Works, was returned by a majority of 2392 votes over Mr. WALKER, and of 5339 over Dr. KENEALY. It is highly satisfactory, we repeat, that the new constituency, composed in so very large a degree of working men, should have accepted a trade candidate. This we write without any reference to Mr. BROGDEN'S political views as a member of a party, but because of his position as a member of the iron trade, and we should have written the same if Mr. WALKER had been returned, for here we know no politics other than those which have reference alone to the trades represented by the *Mining Journal*.

The ironworkers and others of Stoke-upon-Trent equally honoured themselves by returning Mr. W. S. RODEN, a leading ironmaster in that district, in preference to a person who at one time threatened to contest the borough, in the working-man's interest, but who had no further claim to the distinction than that of being the editor of the *Beehive* newspaper. Mr. BROGDEN and Mr. RODEN will render efficient service to the iron trade in Parliament, whenever their especial business qualifications are called forth. As compared with the last Parliament, Messrs. BROGDEN and RODEN are a clear gain to the iron and coal interest in the House of Commons. Mr. W. O. FOSTER has yet to be returned for West Staffordshire, and either Mr. M'CLEAN or Mr. JOHN HARTLEY for East Staffordshire, to complete the complement of legislators engaged in the coal or iron trades, which Staffordshire hopes to furnish to the new Parliament. Mr. DIXON and Mr. MUNTZ also, who are Mr. BRIGHT'S coadjutors in Birmingham, possess a metal trade knowledge, which will make their services of great worth to that district in future legislation, by which its commercial interests may be affected.

IRON OR STEEL DIRECT FROM THE ORE.—In order to produce iron or steel direct from the ore, Mr. G. W. NASAROW, of St. Petersburgh, treats the ore with a solution of carbonate of soda in water, allowing the solution to stand a considerable time in contact with the ore. The weight of the carbonate of soda employed may be about one-fourtieth part of the weight of the ore. The ore thus prepared is placed in a furnace—a reverberatory furnace supplied with a hot blast may be advantageously employed. The ore is melted down, and iron or steel is obtained, according as the metal is allowed to remain in the furnace a longer or a shorter time. The compact bloom obtained may be forged and rolled. Scrap iron may be treated in the same way, but in some cases it is necessary to add additional carbon.

MANUFACTURE OF STEEL.—Puddled bar is converted into steel, according to the invention of Mr. V. GALLET, which has already been referred to in the *Mining Journal*, by coating the bars with a paste composed of wood charcoal, 20 parts; soot, 12; lamp-black, 15; ivory black, anthracite, plumbago, 1 each; carbonate of lime, 33; carbonate of potash, 3 to 20 parts; carbonate of soda, 10; caustic potash, sea salt, sal ammoniac, 1 each; clay, 13; oxide of manganes, 3; and resin, 3 parts—the whole combined with water. The iron is coated with the paste, and the cementation conducted in the usual manner.

TREATING COPPER ORE.—In conducting the ordinary process of treating copper ores containing copper and sulphur, by calcining them with common salt, so as to obtain a soluble chloride of copper, Mr. T. JOHNSON, of Runcorn, employs a gas flame, instead of the reverberated flame from a coal fire, by which means he obtains a uniform heat with scarcely any attention.

MOULDING ARTIFICIAL FUEL.—The apparatus invented by Mr. G. ANDERSON, of Northumberland-street, consists of a pug-mill fixed horizontally on a vertical standard, also forming part of the mill; the thrust journal of the mill-spindle closing one end is also fixed to said standard. The spindle is provided with suitable mixers and propellers, and has a spindle at its outer end, receiving motion from an upper horizontal ram-shaft, which shaft is also provided with arms for mixing the materials. The moulds, which are placed around a rotating table in the usual manner, have false bottoms, which are operated by a cam. The small coal, breeze, &c., are filled into the hopper, and a continuous stream of tar, petroleum, or other liquids is run in at the same time. There is a self-acting arrangement for removing the brick when made.

ARTIFICIAL JEWELS.—For the imitation of precious stones, Mr. Elsner proposes—pure quartz, 45·7 grammes; pure and dry carbonate of soda, 22·8; borax, 7·6; nitre, 3·4; and minium, 11·8 grammes. These ingredients are reduced to a fine powder, well mixed, and fused in a Hessian crucible over a charcoal fire. To colour the mass he adds—for sapphires, 0·106 grammes of carbonate of cobalt; for emeralds, 0·53 grammes of oxide of iron; for amethysts, 0·265 grammes

of carbonate of maganese; and for topaz, 1·59 grammes of oxide of uranium. In all cases the fusion must be perfect, or a clear glass will not be obtained. Cutting greatly improves these imitations.

MINING, METALS, AND MINERALS—PATENT MATTERS.

BY MICHAEL HENRY,
Patent Agent and Adviser, Memb. Soc. Arts, Assoc. Soc. Eng.

Messrs. JAMES (of Ebbw Vale) and JONES (of Govilan) have specified a patent relating to the manufacture of steel, under which they claim the application of carbonising and nitrogenising gases under pressure to wrought-iron in a receiver closed gas tight. These gases are formed in a separate generator, and thence forced into the receiver through an accumulator or otherwise, or the gases may be formed in the receiver itself partially or wholly. The nitrogenous gaseous compound preferred is cyanogen gas. They also claim the use under the compression blast-furnace waste gases, containing carbonic oxide, ammonia, and nitrogen; also other waste gases containing the necessary elements for the conversion of wrought-iron into semi-steel or steel.

A patent relating to lamps for burning liquid hydro-carbons has been patented in the name of Mr. T. H. JOHNSON, as a communication from Park and Love, of Philadelphia. In this lamp a slotted plate of flat or nearly flat shape is fitted to a pendant, perforated or hollow, casing above the burner, which has a slotted dome. An annular space is left between the casing and the dome. The object of this arrangement is to direct the air to the flame, so as to increase the brilliancy of the latter, and also to contract the flame, so as to allow of the use of a cylindrical chimney. For this purpose, also, two air tubes, channels, or orifices may be used, one at each end of the elongated slot in the dome, to direct the air for the same purpose as above described. The perforated casing is made in two parts, an upper and a lower portion. One of these has a lip or tongue, so that when dropped into the other a sufficiently tight connection is formed, but the two may be readily separated. The upper of these parts receives the slotted dome, the flat or nearly flat plate, and the pendant casing, and the lower part receives the wick-tube and elevator.

The same patentee also specifies an invention relating to the manufacture of cast-steel, and the furnaces used for that purpose, and also for remelting. The furnace consist of two fire chambers, separated by a fire bridge; one of these chambers receives a crucible, and the other contains a reverberatory fire chamber. Both chambers are in connection with the crucible, which is surrounded with fuel. The second chamber has a curved or arched top, to direct the flame into the crucible chamber, to the fuel therein, or to the open mouth. The crucible is provided with discharge holes. After bringing both fires to a white-heat, molten cast-iron is poured into the crucible in such quantities as will form steel, together with malleable iron. Vitreous fluxes are introduced. Wrought-iron scraps, previously brought to a white-heat in an adjoining furnace, are introduced into the cast-iron in the crucible. When the cast and wrought irons are mixed and melted together, the contents of the crucible are drawn off through the discharge holes. Puddling may be carried on in the furnace by making the working hole at the top instead of at the side. The puddling instrument is an iron ball on a bar, worked up and down by chain and pulley, or by hand.

REPORT FROM NORTHUMBERLAND AND DURHAM.

NOV. 18.—The greatest interest has of late been manifested respecting the elections, and business to a great extent neglected in consequence; on the whole, if election matters were disposed of, the Coal and Iron Trades are, no doubt, improving. Some of the large works in Durham are going nearly full time, but those cases are certainly exceptional, dulness being complained of in too many instances, and short time is still, as a general rule, resorted to; as the year is drawing to a close it is wished to reduce the stocks as much as possible, and as they have been very large the short-time system is unavoidable. The Steam Coal Trade in Northumberland also continues very dull, on the whole, with little prospect of real improvement before the ensuing spring. At the Cleveland Iron Trade meeting, on Tuesday, there was a very good attendance, but politics were the principal topic of conversation; a considerable amount of business was done, but there was no change in prices, which remain as last reported, but a substantial rise is expected shortly.

Classes for scientific education, in connection with the Government scheme, have been commenced in Gateshead and Hetton, and others at various central points will be commenced when the necessary arrangements are completed. A lecture is to be given at the Literary and Philosophical Society, in Newcastle, on Wednesday, by Mr. Buckmaster, of London, on the facilities and grants of money now offered by Government for scientific education. The object of the lecture is to afford the necessary information to enable this important movement to be pushed forward in the district. It has been fairly introduced, and, as we have before remarked in this letter, there is a large number of men connected with mining, manufacturing, and mechanical industries in the North anxious to avail themselves of the facilities happily now offered for acquiring technical information. The importance of the subject cannot be overrated, and the movement, now fairly commenced, must have an important effect in connection with the various chemical and other processes and professions carried on in the district.

It may be remarked in connection with the transactions of the Mining Institute that the meeting of this society at Manchester, some time ago, has greatly increased the knowledge of the members and others on the various systems of underground haulage in use in various districts; and the labours of the Tail Rope Committee, subsequently appointed, has still further spread information on the subject. It was discovered through the papers read, and discussions held, at Manchester, that endless chains were used with good effect in the southern coal districts, large quantities of coal being conveyed underground by this means at a cheap rate. This has led to a trial of this system in the North, an endless chain having been got to work a few days ago in a colliery near Rainton. A double line of way is used where these endless chains are worked, and it is understood that in the case alluded to the trial has been successful, but we expect to be able to give further particulars respecting it shortly.

REPORT FROM SCOTLAND.

NOV. 18.—The prices of pig-iron have been advanced, partly on account of the lifting of warrants, and partly on account of the speculative operations of parties in Liverpool and London, who are purchasing forward, in the expectation that the quotations at the beginning of next year will be in advance of those now current. Gartsherrie, No. 1, cannot now be purchased from the makers under 59s., and only in small quantities, the brand having been oversold both for the States and the Mediterranean; and prices having advanced in Middlesborough and the South, there are sanguine hopes entertained by some that Scotch pigs will be advanced at the beginning of the year from 55s. to 60s. a ton, while others entertain the notion that if Scotch pig-iron was left to itself, it would not exceed 50s. a ton. The impulse is principally speculative, and to-morrow's operations may quite upset present currency. The present movement cannot be regarded as a permanent one, especially as the shipments of the week only amounted to 8780 tons, as compared with 11,905 tons in the same week of 1867. Middlesborough pigs are now nearly 43,000 tons in excess of last year. There was a flatter market to-day, and about 4000 tons sold at 53s. 9d., down to 53s. 7d. cash, closing sellers 53s. 8d. cash, and 53s. 10d. a month; No. 1, g.m.b., 54s.; No. 3, 51s. 6d.; Gartsherrie and Coltness, No. 1, 59s.; Langloan, No. 1, 54s. 6d. Manufactured Iron is difficult of sale at present quotations; makers are, however, kept fairly busy, and the numerous contracts entered into on the Clyde, and retained here, are likely to conduce to the increase of the trade in this part of the country. At Coatbridge a fair business is being done, but at Glasgow, Govan, and some other works, only limited contracts are being executed; while at Mossend and Blochairn angle-iron is in great demand, rather at advancing prices for forward delivery. Blochairn proprietors are erecting several new puddling-furnaces on Wilson's patent, with the view of adding to the quality of their make. Prices as last quoted.

Coals for household use are in improved demand at the advance noted last week, but shipping qualities are stationary. The colliers are generally acquiescing in the proffered advance, but some masters are slow to concede it in the present condition of the coal market. During last week only 29,235 tons were sent seaward, against 30,590 tons in the corresponding week of last year, making a difference of nearly 7000 tons in favour of 1867. The meetings of the miners during the week contain nothing new, either in regard to wages or demand. There are still works on strike, and this will continue as long as there are grumbling colliers in the country.

Additional shipbuilding contracts have been entered into during the week. The eminent shipbuilding firm of Caird and Co., Grenock, have contracted with a French transatlantic company to build four screw-steamers, in many respects similar to the vessels constructed by the above firm for the North German Lloyd's Company. We also understand that Messrs. Robertson and Co., Grenock, have contracted with Messrs. M'Arthur Brothers, Glasgow, to build a screw-steamer of 500 tons for their Liverpool trade, to replace the Jacinth, destroyed by fire. The new vessel will class 20 years in Liverpool Lloyd's, and will have all the latest improvements in machinery. The engines will be direct-acting, with steam jacket, surface-condensers, patent governor, &c.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

NOV. 19.—The Iron Trade of the district, although not very active, is better than it has been during the summer. Some of the works, such as those at Eckington, have been tolerably busy for some time, and continue so. Most of the furnaces are in blast, so that there is no falling off in the production of pig-iron. The improvement recently noticed in the demand for Coal is maintained, and a large tonnage is being sent daily from Clay Cross, Eckington, and other places, to London, and which it is confidently expected will be kept up during the winter months. In the Burton-on-Trent district also there is more doing. The principal colliery there is at Church Gresley, and belonged to the late Marquis of Hastings, and how it will fare after the financial disclosures as to his lordship's insolvency is matter for speculation. Both at Church Gresley and Moira no little interest is taken in the matter, as the men employed at the collieries are amongst the best paid and employed in the county. During the week there has been plenty of excitement owing to the elections. At Chesterfield, on Tuesday, there was the nomination for that division, and in which the coal interest largely predominates. In the northern division Mr. Jackson, of the Clay Cross Collieries, and his colleague are opposed almost at the last moment by Mr. Arkwright. The contests promise to be very severe in both divisions, and it remains to be seen whether the Duke of Devonshire, who is one of the largest, if not the largest, mineral proprietor in Derbyshire, can carry one of his relatives in each of the divisions.

Sheffield has also been alive with excitement during the week, the election there having more than ordinary interest, owing to the newly enfranchised workmen's efforts to oust Mr. Roebuck, who has made himself particularly obnoxious to them by having obtained the Commission on Trades Unions, and from the ability he displayed as a member of it in dragging out a great deal of evidence, which it would have been to the credit of the Trades Union agitators and leaders to have withheld. The week has been a broken one at most of the works, but the result of the election will, no doubt, be looked upon as full compensation for any pecuniary loss they may have sustained in giving vent to their feelings. With regard to the trade of the town, it is decidedly improving, and in several branches there is considerable activity. In the neighbourhood of Rotherham also business generally continues good, so that the men are now, as a rule, fully employed. There is just now a very good demand for nearly all descriptions of manufactured iron, including rails, plates, and sheets, the works at Milton and Elsecar in particular continuing busy There is also more doing at the principal foundries in pipes and general castings.

The South Yorkshire Coal Trade is now tolerably good, so far as the demand for household qualities is concerned. There is considerably more doing in Silkstones and Barnsley house coal to London. The trade in steam coal to Hull, however, has been anything but active of late, and as the ice has now closed the Baltic, and most of the vessels are either frozen in or laid up for the winter, that part of the business may be said to have ended for the year. The demand for Lancashire is still of a rather moderate character, and so far the low prices which during the year have been the rule have not in any way improved. Makers of coke are kept well going, the requirements of iron producers showing no falling off. A good deal of what is made is not only for the local furnaces, but also for those in Lincolnshire and Northamptonshire.

Mr. John Ray Robinson has been presented with a handsome gold watch by the workmen at the South Belmont Mines, Guisborough, and a few other friends, as a token of their confidence and esteem for him as their manager.

THE MIDLAND MINING AGENTS' ASSOCIATION.—The new association of mining engineers, surveyors, and colliery managers, which is now in course of formation, promises to be a great success, and it will enter on its work with the good wishes of all persons connected with mining operations. Its object being the diffusion of practical and scientific knowledge on the safe working and ventilation of coal mines, there is very little doubt but the advantages which it offers will be gladly embraced by all those for whose benefit it is being established. It was at first intended that the operations of the association should be confined to Yorkshire, and we think the promoters have acted wisely in changing its name, and extending the area of its usefulness throughout the entire extent of the Midland coal field, from Nottingham to Leeds. What is termed the Yorkshire coal field, or, more correctly, the Midland coal field, is one of the most extensive in the kingdom, and, according to Mr. Woodhouse, is unrivalled by that of Northumberland, Durham, or South Wales, being in a great measure unexplored, whilst they are well defined. Still, throughout the entire extent of the Midland district, there is no institution having for its object the discussion of subjects relating to the working of mines, or the making known matters of a scientific and practical character, calculated to be of the greatest importance to those who have the management of the underground workings of collieries. In Yorkshire, and to a still greater extent in Derbyshire, the vast mineral deposits are being developed at a rate unknown in any other part of the kingdom, and in the course of a year or two the quantity raised in both of those counties will be very largely in excess of what it is at present. Such being the case, the establishment of an association embracing such an extensive field, and in connection with districts in which new collieries are being rapidly opened out, cannot help being the means of effecting a vast amount of good. We feel assured that colliery proprietors, viewers, and stewards in Derbyshire, Notts, and Leicester will gladly avail themselves of the proposal to join with their Yorkshire brethren in doing all they can to consolidate an institution having for its object the dissemination of scientific and practical knowledge in relation to mines; and which, whilst labouring to secure the best and most efficient means of working in collieries, will be the means of giving additional safety to the working miner. We, therefore, most heartily wish the Midland Mining Agents' Association every success, fully believing that the objects of the promoters will be more than realised.

THE OAKS COLLIERY.—On Tuesday another body was recovered from the Oaks Colliery, and although it had been entombed for nearly two years, it was at once identified by the relations as the remains of George Marshall.

NEW MIDLAND MINING ASSOCIATION.

A numerous and influential meeting of mining viewers, stewards, and others connected with the collieries in Yorkshire was held on Saturday, at the Bull Hotel, Wakefield, at which, in the first place, it was agreed that, instead of the name first fixed upon at a previous meeting, the title should be "The Midland Mining Agents' Association." It would thus include the entire coal field, which commences close to the town of Nottingham, and extends to Leeds. At the meeting on Saturday nearly every colliery district in the county was represented, and amongst those present we noticed—Mr. Miller, Strafford Main Colliery, Barnsley; Mr. Hodgson, Kippax; Mr. Bruton, Messrs. Briggs and Co's. Co-operative Collieries, Methley and Normanton; Mr. Maddison Woolley; Mr. G. Minto and Mr. J. Beaumont, the Oaks, Barnsley; Mr. Platts, Wharncliffe Collieries, Wortley; Mr. W. H. Chambers, Chapelton and Thorncliffe, near Sheffield; Mr. Bradley, Monk Breton and Hawarden, Wales; Mr. Rothery, Waterloo Main Colliery, Leeds, the well-known patentee of coal-cutting machinery; Mr. Rowley, Mineral Surveyor, Leeds; Mr. Hunter, Wakefield; Mr. J. Willey; Mr. T. Willis, Drighlington, near Leeds; Mr. Wilkes, Glass Houghton Colliery, near Pontefract; Mr. J. Warburton, West Riding Collieries, Wakefield; Mr. W. Warburton, Stanley Colliery, Wakefield; Mr. Arundel, West Allerton; Mr. Keithley, New Hall Colliery, Leeds; Mr. Atkinson, Middleton Collieries, Leeds; Mr. J. Steele, Stanley, &c. Its permanent officers could not be appointed.

Mr. MILLER was called upon to preside. Mr. HODGSON was requested to undertake the duties of secretary *pro tem.*, to which he acceded.

The CHAIRMAN commenced the business of the meeting by noticing what had been done since the movement was first initiated. He said that a fortnight ago, at the meeting held where they then were, it was agreed that a deputation should wait on the Chairman (Mr. WOODHOUSE) and members of the South Yorkshire Viewers' Association at Barnsley, on Wednesday last, and that a code of rules, suitable for carrying out the objects of the association, should be drawn up. The deputation went to Barnsley, but, owing to the death of the Marquis of HASTINGS, Mr. WOODHOUSE was unable to be present; but in a letter which he sent he stated that he took great interest in the success of the association, and in the carrying out of the views of the promoters. Such being the case, the object of the present meeting would, in a great measure, be confined to the considering of the rules which had been drawn up. He would state, as his own opinion, that he fully believed they could amalgamate with the South Yorkshire Viewers' Association on favourable terms. The importance of such associations was now generally recognised, and a strong desire was felt for their extension. Hence it was that it had been decided to change the name first adopted to "The Midland Mining Agents' Association," so that they would be enabled to largely extend the sphere of their operations. He might say that the association at Barnsley had belonging to it gentlemen who took rank with the first engineers in the kingdom, and which he looked upon as an additional inducement for them to be connected with it. With reference to the interview on Wednesday last with the members of the Viewers' Association at Barnsley, it was felt on both sides that nothing definite could be done in the absence of Mr. WOODHOUSE, but the feeling was in favour of amalgamation. To Mr. P. COOPER was delegated the task of drawing up the rules, and he had taken as a basis those of the North of England Institution. The head quarters of that institution were at Newcastle, but it was thought by many of those present that the new association would not require a central place for meeting; but that it would be more advantageous for them to hold their meetings at different places, according to circumstances, and as might be agreed upon by the executive council. It would now be for those present to consider and agree to the rules, or alter and amend them.

Mr. BRUTON then read the rules which had been prepared by Mr. COOPER, and which were discussed *seriatim*. It was agreed that the institution should be called "The Midland Mining Agents' Association," and consist of certain persons connected with mining operations, and who should pay an annual subscription of one guinea, payable the first Tuesday in July. Life members to consist of donors of 20*l.* and upwards to the funds of the association.

The CHAIRMAN remarked that the annual subscriptions to the South Yorkshire Miners' Association were payable in July, so that in the event of their amalgamating with that body by the commencement of the new year, perhaps, half a guinea would be deemed sufficient to commence with, and then they could fall in with the ordinary annual payment in July.

Mr. BEAUMONT considered they ought to pay a guinea each on the amalgamation taking place, seeing that they would become joint possessors of the funds at present belonging to the Viewers' Association at Barnsley.

After some further discussion, it was agreed that the point should stand over for the present.

The next resolution was then read and agreed to. It was to the effect that any person not a member, on subscribing one guinea annually, should be entitled to admission to the library, lectures, discussion, &c., and also be entitled to a copy of the annual report of the proceedings, as well as of any papers which might be printed. For every extra guinea subscribed up to five guineas so many persons could be introduced, and have the like privileges. Persons wishing to become ordinary members to be ballotted for after being proposed by two members.

It was then agreed that the association should be managed by a president, six vice-presidents (not more than four of whom should be mining engineers), and 18 councilmen (not more than 12 being mining engineers). The president and vice-presidents to be eligible for re-election for not more than three consecutive years.

Mr. J. WARBURTON considered that three years were too many for the principal officials to be enabled to continue in office, and moved that it should be for two years only.—Mr. BRADLEY said he was of the same opinion, and should, therefore, second the motion.—On being put to the meeting, it was agreed to.

Mr. BRUTON then read the next rule, to the effect that the council should decide as to the places where the annual and monthly meetings should be held.

Mr. WARBURTON moved as an addition that the day of the month for holding meetings be so fixed as to suit the members in the locality where it was to be held.

Mr. MADDISON seconded the motion, which was agreed to.

All the other rules were then agreed to, the principal ones being to the effect that the council should have the power to decide as to what papers should be printed, and that the author of any such paper should be entitled to 12 copies, and each member to one; and that the funds should be deposited in the hands of the gentleman who was appointed treasurer, and distributed by him according to the orders of the council.

Some discussion then took place as to the future course to be adopted, and as to the time when those present should meet again; and also as to whether it would not be advisable to put down their subscriptions at once, so as to give force and weight to their proceedings. After several of those present had spoken on the points stated, the question as to payment and the others were allowed to stand over.

Mr. BRUTON then moved that the meeting should stand adjourned until the day on which the South Yorkshire Viewers' Association next met at Barnsley, which it was expected would be at an early date.—Mr. HUNTER seconded the resolution, which was agreed to.

A vote of thanks to the Chairman and secretary, which were duly acknowledged, brought the proceedings to a close.

It may be stated that there was a unanimous feeling that no time should be lost in fully carrying out the objects contemplated by the association, and in extending the scope of its operations.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

NOV. 19.—There is no change in the actual state of the Iron Trade. Orders, perhaps, are smaller, but most of the works have enough to do for a few weeks, and soon after Christmas greater vigour is anticipated. Everybody is talking about electioneering, which, to the joy of all people who have business to attend to, or who value mental or physical sobriety, will soon be over. To-morrow the East Staffordshire election will be decided, and many Liberals will unite with the Conservatives in regret should Mr. John Hartley be thrown out. Mr. Roden was elected without opposition on Tuesday, with Mr. Melly, to represent the 120,000 inhabitants of the Staffordshire Potteries, and will be a valuable addition to the men who conserve in the House of Commons the interests of the iron and coal trades, and of commerce in general. Mr. Pochin, who is elected for Stafford, has considerable connection with companies engaged in departments of the iron trade, whilst Mr. Alexander Brogden, the new member for Wednesbury, is a very valuable addition to the representatives of that and the coal trade. On the whole, considering the ardour of the fight, there has been less violence than formerly.

There is a certain degree of movement amongst the miners for an advance of wages, and last Saturday at several collieries about Dudley notice was given for an advance of 6d. per day. It does not seems likely that any change in wages will be made before spring.

The Regent Iron Works, near Bilston, formerly carried on by Mr. George Beard, has been taken by a company, composed principally of practical working men. Such a combination offers good grounds for anticipating success. Practical men, acting with prudence, and enforcing economy in every department, have a good chance of making a profit in the production of sheets, rounds, and other sorts of iron not requiring very costly machinery.

An invention connected with the tin-plate manufacture is at present attracting some attention in this district; it is that of Mr. W. Williams, of Tividale. The advantage is that it materially diminishes the number of processes through which the plates are passed, and that the loss of metal by oxidation and injury to the plates by high temperature are avoided. Mr. Williams employs a washman's pot, divided into three or more compartments, each containing tin or terne metal; he puts flux, or grease, on the metal in the first and third compartments. The plates are passed under the division between the first and second compartments, lifted from the second by tongs, and plunged into the third through the flux. They are then again lifted by tongs, and placed on the rack.

It is satisfactory to state that the creditors of the Birmingham Banking Company will at once be paid in full, the last dividend of 3s. in 1*l.* having been ordered to be paid forthwith.

REPORT FROM MONMOUTH AND SOUTH WALES.

NOV. 19.—It has been already stated in previous reports that a better feeling has sprung up in the Iron Trade of this district, and that the depression which had prevailed for the past two years is gradually passing away. For two or three weeks past the trade has been steadily improving, and there is a fair probability of the present year witnessing the cessation of the long depression, nothing having arisen during the past week to check the improvement which has set in. It is pretty generally known that stocks have become greatly reduced, yet it is somewhat remarkable that prices have not advanced. Prospects, however, are cheering, several makers refusing orders for delivery next year at present rates. The next quarterly meeting is anxiously looked forward to by both buyers and makers, the general opinion being that an advance in the price of iron will then take place. There is a steady increase in the shipments to America, and now the Presidential election is over, an improvement in the transactions with that country is speedily anticipated. Shipments are also about to be made to South America, and the orders from that quarter, together with others coming to hand, are sufficient to find full employment for the hands engaged at the rail-mills, which are now kept going with tolerable regularity, and there is every probability of their continuing so during the winter months. There is an average amount of business being transacted with continental houses. It is also satisfactory to find that the good feeling which lately sprung up in the Home Trade is fully sustained; and, notwithstanding the excitement prevailing, consequent on a general election of unusual ardour, and which has adverse influences on trade operations generally, the future prospects of the iron trade are decidedly of a cheering and hopeful character. Bars meet with a good demand, principally for the continental market. Pigs of the best brands command an average sale at current quotations. Tin-plates are in better request, and the mills in the district are, as a rule, fairly employed.

The Steam Coal Trade has now a prospect of attaining in a short time a position something like its usual activity and vigour, a favourable change in the weather having set in. The number of ships arriving at the local ports is not so numerous as anticipated, and merchants and shippers still experience a difficulty of obtaining suitable tonnage, but not to the extent which lately existed. There is a slight improvement in the demand from the mail packet stations, but the companies' purchases are still somewhat restricted. Considerable clearances are about to be made to South America, and French

houses are purchasing average quantities. To the continental markets and Mediterranean ports about the usual supply is being sent. There is an increase in the demand for house qualities, but not sufficient to keep the hands employed anything like full time.

In a previous report it has been announced that negociations had been opened by some London capitalists for the purchase of the Blaina Works, and that there was a prospect, after the many vicissitudes of this unfortunate establishment, of its being again started. These negociations have, we are enabled to say, so far progressed satisfactorily, and there is a fair prospect of their being brought to a speedy close.

The colliers of the Deep Duffryn Colliery have just given their half-yearly report. At their visit they found the furnaces in good condition, and both the east and the west sides in good working order; and when "blowers" were discovered they found sufficient air to prevent accumulation of gas. The colliers employed choose their own men, and appoint their own day. Only on the morning of the intended inspection is any notice required to be given, so that they find the whole of the workings and waste in the usual order. Two men are appointed to inspect each pit, and they are allowed two days to thoroughly examine every part. Mr. George Brown, the manager, contends that the men on the spot are the proper parties for such inspection, and not strangers; and he has this satisfaction, that for the six years he has adopted this system of the colliers choosing their own inspectors it has answered admirably.

At the Rhymney Iron Company meeting, on Wednesday, dividends were declared of 15*s.* per 50*l.* share, and 4*s.* 6*d.* per 15*l.* share. Taking into consideration the great depression which has so long prevailed in the trade, it is a matter of congratulation that iron companies are able to declare any dividend.

The arrivals at Swansea include—the Clarissa, from Cape Town, *via* London, with 1059 bags of copper ore and 349 packages copper regulus, for Taylor and Son; Eagle, from Rouen, with 60 tons of plaster of Paris, for F. Lowther; Havre, from Havre, with 20 tons of copper ore, 5 tons of copper ingots, and 6 tons of old copper, &c., for Henry Bath and Son; Henry and Dora, from Cherbourg, with 165 tons iron ore, for R. Crawshay; Native Pearl, from Antwerp, with 195 tons fire-clay, for Richardson and Walters; Louis, from Bilboa, with 135 tons iron ore, for W. H. Tucker; Margaret, from Santander, with 32? tons zinc ore, for Laxey Neath Co.; Louis Pierre Marie, from Rotterdam, with 237 tons of phosphate of lime, for Vivian and Sons; Silver Light, from Antwerp, with 330 tons of fire-clay, for Vivian and Sons; Flying Foam, from Antwerp, with 160 tons of fire-clay, for the Swansea Zinc Company; Alpha, from Caldera, with 24 tons of copper, in bars, 190 tons of copper regulus, and 376 tons of copper ore, for H. Bath and Son; Petite Paysaunne, from Santander, with 160 tons of zinc ore, for the Swansea Zinc Company. ——

THE LOCAL ELECTIONS.—Mr. H. H. Vivian and Mr. C. R. M. Talbot have been re-elected, without opposition, for Glamorganshire, and Mr. Dillwyn has met with the a similar compliment at Swansea. Merthyr has rejected Mr. Bruce, its tried and faithful member, in favour of Mr. Richard, a Dissenting minister, and Mr. Richard Fothergill, whose local claims, it must be admitted, entitled him to one of the seats. The great majority of the electors are Nonconformists, while Mr. Bruce is a Churchman, and the election seems to have been decided more on religious than political grounds.

Meetings of Mining Companies.

PRINCE OF WALES MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, St. Michael's House, on Thursday—

Mr. J. Y. WATSON, F.G.S., in the chair.

Mr. JEHU HITCHINS (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

A statement of accounts was submitted, which showed a profit upon the three months' operations of 678*l.* 9*s.* 1*d.* The balance of assets over liabilities amounted to 2015*l.* 5*s.* 3*d.* That does not include the sale of ore made on Thursday, nor the monthly cost due next week.

The report of the agents' was read, as follows:—

Nov. 18.—We beg to send you our report for your meeting on the 19th inst. Since the last general meeting the 65 east has been driven 7½ fms., being now 22 fms. 1 ft. from cross-cut; lode in present end 3½ ft. wide, worth 25*l.* per fm. The 65 west has been driven 7 fms., being now 17 fms. 1 ft. west of cross-cut; about 3½ fms. behind the end we passed through a cross-course from 5 to 6 ft. wide, of a splendid character, and letting out water freely; in the present end the lode is 3 ft. wide, worth 10*l.* per fm., with every appearance of improving. The 55 east has been driven 11 fms., being now 54 fms. 2 ft. east of cross-cut; lode 2 ft. wide, composed principally of gossan, with stones of capel intermixed—a very promising end; this drivage is at present suspended, and have put the men to rise in back of this level, against the new shaft; this drivage will be resumed again as soon as convenient, to continue the rise and drivage at one time. The 55 west has been driven 6 fms., being now 38 fms. west of cross-cut, and 13 fms. west of western cross-course; the lode in the present end is 2½ ft. wide, composed of capel and quartz, with good stones of copper ore intermixed, but not enough to value. In the 55 west we have driven a cross-cut south about 8 fms., intersected the new south lode, and driven on its course 2 fms.; lode 1½ ft. wide, composed of capel, quartz, and mundic, with occasional stones of rich ore, but not to value. In the 55 east we are sinking a winze, the same being down near 8 fms. below the 55; the lode is 2½ ft. wide, worth 10*l.* per fm. We hope to communicate this winze with the 65 east by the latter part of this month. The 45 west has been driven 3 fms. 1 ft.; in the present end we are cross-cutting south towards the new south lode, and have driven 6 ft., ground favourable. In the 45, west of cross-course, we are driving west on the new south lode, the same being 1½ ft. wide, worth 5*l.* per fm. In the back of the 45 west we have a stope working by six men on the two lodes, which are worth 10*l.* per fathom each. In the back of the 55 east there is one stope working by four men, lode worth 30*l.* per fm. Two stopes in the back of the 55 west, working by four men in each, lode worth 12*l.* per fm. each. We have fixed a 9¼ in. plunger-pole in the 45 fm. level, in place of the 7 in., also 8 in. hanging rods all through the shaft, in place of the 6 in., which has put the pitwork in good trim, and keeping the water with five strokes per minute. In conclusion, although the new south lode cut in the 55 cross-cut is not to value as yet, we fully believe it will be found to be a productive one; and in the 45 ends, both east and west, from the present appearances, we have every reason to expect an early improvement. We hope to sample on Friday, the 26th inst., 120 tons of good quality copper ore.—JOHN GIFFORD; WM. GIFFORD.

The CHAIRMAN moved that the report be received and entered on the minutes, and that the accounts be passed and allowed.

Mr. HITCHINS, in reply to questions, stated that the new south lode had been driven upon east and west in the 45 fathom level about 10 fathoms, The 65 end was not yet up to the winze, but they expected to hole by about the end of the month.

Mr. PETER WATSON wished to know what distance the 45 and 55 west had been driven since the last meeting. He drew attention to this point at the last meeting, and he now wished to know what distance these levels had been driven, and what number of men were employed, and the amount that was being paid for driving?——The CHAIRMAN said that the 45 had been driven 3 fms. 1 ft. since the last meeting.

Mr. JACKMAN wished to know if the bills had been charged for the new rods and pitwork?——The CHAIRMAN replied that the cost was not due till next week, against which the committee had not taken credit for the ore sold to-day. The amount for new pitwork, &c., was 18*l.*

The report was received and entered on the minutes, and the accounts were passed and allowed. A dividend of 1*s.* per share was declared.

The CHAIRMAN said that Mr. Hitchins at present received only five guineas per month for his services as secretary, office rent, &c.; and, upon Mr. Hitchins asking for an increase, the committee preferred to leave the amount to be decided by the meeting.

Mr. PETER WATSON, after complimenting Mr. Hitchins upon the satisfactory and efficient manner in which he discharged the duties of his office, proposed that his remuneration be increased to 10*l.* per month, and also that the thanks of the shareholders be tendered to Mr. Hitchins for his past services.——Captain CARLTON seconded the proposition, which was put and carried unanimously.

Mr. HITCHINS thanked the shareholders for this tangible earnest of their approbation of the services he had rendered, and he could only say, in acknowledgment, that he hoped the past would be accepted as an augury as to the future. He assured the meeting he would continue to give his best attention, as he had always done, to the promotion of the company's interest, and to do his duty with impartiality and efficiency. (Hear, hear.) As to the mine, he regarded it, so to speak, as a child of his own, having stood by it through evil and good report. Although he was quite willing to allow bygones to be bygones, yet he could hardly refrain from drawing attention to the fact that there were certain gentlemen in that room who, when the first dividend was paid by the Prince of Wales, were vociferous in their declaration "that it was the first and would be the last the mine would ever pay," but the best reply to those "practical opinions" was that seven dividends have been paid, and, for the satisfaction of the "practicals," he might inform them he saw no reason why it should not become a permanently dividend-paying mine. Prince of Wales was not a mine of to-day or to-morrow only, but of years. (Hear, hear.) Although the lodes might not be considered regular, he saw in the mine a great and productive future—the side lodes he regarded as a most favourable indication for the production of ore for a long time to come, and when he informed them that there were several lodes in the sett, he did not think he should be accused of expressing an opinion without substantial data. (Hear, hear.) He again thanked the shareholders for their kindness to him, and reiterated his determination to do his utmost to promote the best interests of the enterprise.

The CHAIRMAN, in reply to a question, stated that the committee had decided upon the sinking of the shaft, and preparations were being made for the operation to be carried out effectively, and with vigour. He added that the committee had, in fact, decided upon it some time since, and the reason it was not sooner commenced was simply because the winze was not holed.

Mr. JACKMAN asked if the present engine was capable of keeping the water to the 75?——The CHAIRMAN said the reply he could make to that question was that Mr. Hitchins, Capt. Gifford, and the engineer informed the committee that the engine was capable of carrying the mine to a much greater depth than 75 fms.

Mr. HITCHINS said the present engine would be available for a considerable time, inasmuch as several appliances could be employed, by which its effectiveness would be materially increased. He (Mr. Hitchins), in reply to a question, stated that the 55 east was in advance of the 45. As the 55 was under the gossan, and at a greater depth than the 45, it was prosecuted as the pioneer level.

A SHAREHOLDER asked if Mr. Tonkin (of Truro) was present? because if he were he might explain his views upon the mine.

Mr. POWELL asked if Mr. Tonkin was a shareholder?——The CHAIRMAN replied in the negative.

Mr. LANE asked the present value of the reserves?——The CHAIRMAN said they were computed to be worth 15,000*l.*, and, in addition to that fact, he might inform the meeting there was more ore discovered than was being taken away.

Mr. HITCHINS added that there were no stoping operations in the back nor in the bottom of the 65, the whole of that ground was in reserve. As to the new south lode, it had been driven upon about 12 fms. in the 45, and ore was found throughout the whole distance.

A vote of thanks was passed to the Chairman, which terminated the proceedings.

TAMAR VALLEY SILVER-LEAD MINING COMPANY.

A general meeting of the shareholders was held at the offices, St. Michael's House, Cornhill, on Monday,

Mr. JAMES BRUNSKILL in the chair.

The accounts for the four months ending Nov. 5 showed a balance of liabilities over assets of 1171*l.* 18*s.* 6*d.*

The SECRETARY having read the statement of accounts, the report from the agent was read, as follows:—

Nov. 14.—I beg to hand you my report of this mine, showing the work completed, together with the present prospects, since the date of the last general meeting, on July 23, 1868. The engine has been erected and completed, together with the masonry, and the same commenced working for good on Oct. 10 last, and the necessary surface work erected—capstan, sheers, poppet-heads, bobs, &c. The water has been drained nearly to the 37, where the drop-lift came either on a sollar or a pile of stuff in the shaft; I am inclined to be of the opinion that it is a sollar, with stuff on it. The shaft has been divided from surface to the 27 fm. level, footway put in, cistern-plat cut in the adit, bearers, cistern, and plunger-lift fixed complete to surface. In the 27 a cistern-plat is cut, bearers, cistern fixed with plunger-lift, rods, &c., complete to surface, with all necessary fittings. Every effort is being made to reach the 57 in as little time as possible, so as to force on the cross-cuts towards the Tamar Valley lode. The distance to drive, as near as can be ascertained by the underlie, is about 15 fathoms, where the Tamar Valley lode is worked upon in the new or north shaft; the same presents a most promising appearance, and bids fair to be productive at a deeper point. In the 17 the lode left standing varies in size from 2 to 5 ft. wide, composed of fluor-spar, mundic, and silver-lead ore, and will in many places work at a profit; we shall at once commence to clear this level, and work on the lode standing. The 27 will work in many places, so far as the lode can be seen, at a profit for fluor-spar and silver-lead ore; this level we shall also commence to clear south to enable us to reach the point where report says there is a rich lode of silver-lead ore gone down in the bottom of the level for many fathoms in length. We shall also extend the 37 south with all speed, so as to come to the ore ground in as little time as possible. I am of an opinion when the before-mentioned levels are cleared we shall then be in a position to work many tribute pitches at an average tribute, and raise quantities of fluor-spar and silver-lead ore. In conclusion, I am pleased to say our progress is satisfactory, and prospects our very encouraging, therefore nothing will be left undone by me to bring the mine into a proper state of working, and make the best returns possible for the shareholders. The engine, with the machinery, works well in every respect.—JOHN GOLDSWORTHY.

The CHAIRMAN, in moving the adoption of the accounts and report, stated that everyone could not be otherwise than satisfied at the very satisfactory progress made since the last meeting, and he felt great pleasure in meeting so many of the shareholders, believing that they had a valuable property, only requiring a little further development to attain satisfactory results. He felt great pleasure in moving the adoption of the report and accounts. The secretary and manager would be most happy to answer any questions which shareholders might feel disposed to put.

Mr. HENRY MANSELL wished to know why the labour cost for September should be so large compared with the previous months?——Capt. GOLDSWORTHY explained that it was owing to the larger number of hands employed in getting the machinery, &c., on the mine. The next cost-sheet would not be so heavy, and the merchants' bills much lighter.

Mr. HENRY CHAPMAN wished to enquire what level the manager proposed to clear? From the plan on the table it appeared that a large run of ore ground had been passed through by the former workers in the 27, and several winzes sunk below that level. From what he could see, it would be advisable to clear the 37 first, so as to get under the lode gone through in the level above.

Capt. GOLDSWORTHY said that it would be necessary to clear the 27, so as to enable the men to proceed with the 37, and at the same time enable them to rise from the 37, and communicate with the winzes sunk from the 27.

Mr. ROBERT CURTIS wished to enquire from what point of the mine the lead already at surface had been extracted?——Capt. GOLDSWORTHY stated it came from the north shaft, on the Tamar Valley lode, in a level extended south, but only worked by horse labour. The ore ground left in the 17 by the former workers leaves no doubt as to the value of the lode.

Mr. HENRY MANSELL enquired of Capt. Goldsworthy how long he expected it would take to clear the shaft, and commence working on the 57 fathom level cross-cut, towards the Tamar Valley lode, and if he intended working on the 17 and 27 fathom levels while this work was being done? for if there were a lode in both levels, as was stated, that could be worked at a profit, it would considerably lessen their expenditure for the next four months.

Capt. GOLDSWORTHY said the expense of clearing the 17 and 27 fathom levels will not exceed 5*l.* each, and would not occupy more than a week. As to the shaft, he expected to be at the bottom of the mine, and in full work, in about one month.

Mr. F. W. MANSELL, in proposing a call of 4*s.*, stated that, for the satisfaction of his friends and himself, who held largely in the mine, he visited the property in October last, when, from what he then saw, he was so satisfied with the prospects, and the work done, that he not only advised his friends to increase their holdings, but did the same himself. There were few mines in Devon or Cornwall which offered such inducements for the employment of capital, at so small a risk, as this. With sufficient machinery to thoroughly develope the mine, and all necessary buildings erected, it was, in his opinion, without doubt, as fair a speculation as could be met with. It would be far better to make a call sufficient to clear off every liability, although so large a one was not expected. He was pleased to see everything so closely charged, and felt assured the shareholders (of whom five-sixths were represented at this meeting) would be better satisfied than if they left liabilities unprovided for. Having great confidence in the agent, and from his knowledge of the property, he felt convinced they had a mine in Tamar Valley which would redound to the credit of all concerned.

Mr. JAMES WESTON said he had much pleasure in seconding the proposition for a call of 4*s.* On his late visit to the mine he was thoroughly satisfied that everything had been done in a most substantial manner. Had he not seen he could not have believed so much work could have been done for so little money. He was thoroughly satisfied that they would have a good mine. Since his last visit he had increased his interest from 200 to 400 shares, and he saw from the share list that other members of the committee had done likewise. He had every confidence in their manager and secretary, and felt that he could not do better than propose a vote of thanks to them for their efficient services. In conclusion (judging from the agent's report, upon which he based his remarks), it appeared to him that the proposed call would place the mine in a thoroughly good position, and that before the next meeting the secretary would be in a position to announce the sale of a good parcel of lead and fluor-spar.

The resolution having been put to the meeting, was carried unanimously.

Mr. MATTHEW GREENE said—I apprehend, notwithstanding the very kind manner Mr. Weston has spoken of my services in connection with the Tamar Valley Company, that it will be as well for me to say as little as possible about myself, and confine the few observations I have to make to the position and prospects of the mine. No doubt is entertained as to the eligible position of this property, and that the Great Tamar lode, and also the Tamar Valley lode, present indications that justify all statements that have been made as to the mine proving a fine dividend property. We are now amply provided with all necessary machinery and appliances for thoroughly developing the two fine lodes which are already laid open. On reference to the report of our agent, I see he states that the lode in the 17 and 27 fm. levels can now be worked at a profit. I need scarcely tell you that we hardly expected this. Our object in erecting the engine was to cut the Tamar Valley, or new lode, 40 fms. deeper than the workings in the north shaft, and 80 fms. further south, which can be done by a cross-cut of only 15 fms. from the bottom of the engine-shaft, which has been sunk 57 fms. This course of operations will save us a large sum of money, and really lay open a deal of ground, which can be worked at a fair profit, and also enable us so see the Tamar Valley lode at the depth just referred to. I feel confident we shall find a good lode standing in the 37 fm. level, which will be cleared in a few days. Our weekly reports from this time will now be full of interest to the shareholders, as all our dead work is nearly completed, and every day will enable your agent to speak more fully as to the value and character of the lodes. I think, gentleman, you have acted wisely in making a call to keep us out of debt, and conduct the operations with the necessary spirit and vigour. I am certain we have a valuable mine, and one on the eve of making good profits, a result that will reward you for your outlay, and me for the pains I have taken, and to which Mr. Weston, one of our staunchest shareholders, has so kindly referred. Gentleman, a better attended or more unanimous meeting I never saw, there being no less than 5080 shares represented here to-day. (Hear, hear.)

A vote of thanks to the Chairman terminated the proceedings.

WHEAL BULLER MINING COMPANY.

A general meeting of shareholders was held at the offices, Crosby House, London, on Tuesday,—Mr. HENRY MILFORD in the chair.

Mr. WARD (the secretary) read the notice convening the meeting, and the minutes of the preceding general meeting, which were confirmed. A statement of accounts for the three months, ending with September costs, was submitted, which showed a debit balance of 482*l.* 3*s.* 4*d.* The agents' report was read.

Messrs. Michell and Jenkin, the engineers, say—"The new condensing work to Stevens's whim is almost ready for fixing; when this is completed we shall be able to work with a less expenditure in fuel. There will be a new nozzle wanted shortly for the stamping-engine, the present one being very defective, and causing a loss of steam, besides hindrances. The pumping-engine and boilers are in a fair state of repair, and are of ample power to enable Hocking's shaft to be sunk 30 fms. deeper."

The CHAIRMAN said that the committee, with their secretary, had carefully gone into all the accounts, and he was pleased to meet them under a little more favourable circumstances than at the last meeting, when the balance against the mine was 602*l.* 19*s.* 7*d.*, and they would see from the accounts before them that to-day it was only 482*l.* 3*s.* 4*d.* He was pleased to see their purser present, who, having just come from the mine, would be able to answer any questions.

Mr. T. PRYOR said that all accounts were regularly charged up, and the shareholders might rest assured that the agents were all pulling together for the welfare of the mine. The great point in Wheal Buller was undoubtedly the junction of the main lode with Stevens' lode in Hocking's shaft. This point was regarded with a great deal of interest by parties in the neighbourhood of the mine, who were sanguine that it would be attended with success.

After some little discussion, the accounts and report were unanimously passed, and a call of 25*s.* per share was made.

The CHAIRMAN then went fully into the particulars of the agreement with the Copper Hill Mine, from which it appears that the latter company have agreed to pay to Wheal Buller certain charges for pumping water, drawing, &c., which will amount to something like 200*l.* per annum.

A SHAREHOLDER said that they were greatly indebted to their Chairman for bringing the agreement to such a satisfactory conclusion, as he understood that Mr. Milford had been in Cornwall, and devoted attention to the matter.

On the motion of Mr. LITTLE, seconded by Mr. COUSINS, the agreement was ordered to be adopted and entered in the cost-book, and that a special vote of thanks be presented to the Chairman for the trouble he had taken in the matter.

Mr. WARD, in reply to a Shareholder, said when at the mine last he went fully into matters, and he was pleased to find that their machinery had been put in a much better position than formerly, and that a considerable saving is thereby being effected. The quality of their tin was good, and the price obtained for the last parcel was 60*l.* 12*s.* 6*d.* per ton, thus showing that a small increase would enable them to meet their costs. At the same time they were developing that part of the mine at Hocking's shaft, besides other important points.

The committee were re-elected, and a vote of thanks to the Chairman terminated the proceedings.

THE PORT PHILLIP AND COLONIAL GOLD COMPANY.

An extraordinary general meeting of shareholders was held at the Terminus Hotel, Cannon-street, on Thursday,

Mr. H. MOOR in the chair.

Mr. C. H. FIELDER (the secretary) read the notice convening the meeting, and also the special resolution to be submitted to the shareholders, as follows:—

"That the conditions and regulations of this company, as contained in the Deed of Settlement of the company, dated the 18th day of February, 1852, the Royal Charter incorporating the company, dated the 10th day of August, 1852, and the Supplemental Deed of Settlement of the company, dated the 18th day of January, 1853, shall be and the same are hereby (subject to the sanction of the Board of Trade being thereto duly obtained) altered by the insertion therein of the following powers or authorities, which shall be deemed and taken henceforth to be part of the said conditions and regulations, and to override and vary any clause or thing in the said conditions and regulations contained which is inconsistent therewith or repugnant thereto,—that is to say:—

"This company is hereby authorised, by special resolution, at any time or times, or from time to time, to modify its conditions and regulations, so as to reduce the nominal capital of the company in such manner, and to such extent, as the company may by such resolution determine; and also by the same or any other special resolution to modify conditions and regulations so as by subdivisions of its existing shares for the time being, or any of them, to divide its existing or reduced capital for the time being, or any part thereof, into shares of smaller amount than that fixed by the present conditions and regulations thereof; or also on the occasion of, or as part of, or in connection with, any such reduction and subdivision as aforesaid, by the same or any other special resolution, to appropriate to and among the reduced shares, in such proportion and manner as the company may by such resolution determine, the amount paid up on the original or existing shares, so as to be subdivided, and to make any subsidiary or incidental alterations in the said existing conditions and regulations which for the purposes of such subdivision may be thought requisite or desirable."

The CHAIRMAN, in moving that the resolution as read be received and adopted, said that, in accordance with the resolution passed on Oct. 29, the company had been registered under the Limited Liability Act, the certificate of such registration being in his hand. It now rested with the shareholders to adopt the resolution as proposed, and then, with the consent of the Board of Trade, the alterations in the constitution of the company would be completed. It would be necessary to call the shareholders together again before all the tedious forms were completed, but the Articles of Association must be acted upon, or all their present endeavours would prove null and void.

In reply to a SHAREHOLDER, the CHAIRMAN stated that the motion simply referred to the alteration in the shares and share capital. The resolution did not touch any other portion of the original deed. The alteration proposed was admitted to be necessary by all parties interested.——Mr. S. HERAPATH having seconded the motion, it was put and carried unanimously.

There were shareholders present and by proxy representing about 75,000 shares.

A vote of thanks to the Chairman was passed, who, in replying, said it would be necessary for the shareholders to attend two other meetings before all the preliminaries could be completed. The proceedings then terminated.

SCOTTISH AUSTRALIAN MINING COMPANY.

An annual general meeting of shareholders will be held on Tuesday.

The report of the directors (to be submitted) states, with reference to the Lambton Colliery, that the quantity of coal raised and sold during the six months ending June 30 was 83,937 tons, being a monthly average of very nearly 14,000 tons. From Jan. 1 the price charged for large coal sold by this company, and by the two other principal coal companies in the colony, has been 10*s.* per ton, put on board ship at the port of Newcastle. Certain contracts at a lower rate, however, were current at the beginning of this year, and in fulfilling them, 8987 tons of coal, included in the total quantity sold by this company during the period now reported on, were shipped at a lower rate than 10*s.* per ton. The net profit from the colliery, after writing off the sum of 2928*l.* 11*s.* 10*d.*, to meet wear and tear, and adding 1000*l.* to the "Casualty Reserve Fund," &c., was 9505*l.* 13*s.* 1*d.* The state of matters existing at the date of the last advices from the colony was such as to prepare the board for reduced profits during the current half-year. They feel satisfied, however, that, as hitherto, the aim of the colonial management will be to maintain the permanent interests of the company; and they believe this will be promoted by the course that eventually those in the management of the other collieries will find it for the benefit of the interests they represent to adopt. In the meantime, some of the gentlemen referred to have run down prices to rates that may fairly be called prejudicial to all in the trade. In view of the probable falling off of profits above spoken of, it will be seen that the directors, besides providing more fully than hitherto for wear and tear, depreciation, &c., propose to carry forward a liberal balance from the profits which have been earned during the period now dealt with, and which it may be prudent to consider exceptionally large. Mr. Croudace, the colliery manager, reports the workings, machinery, and rolling stock as all in a satisfactory state, and in good working order; and that he is steadily carrying on operations with a view to a progressive trade. As to the Cadiangullong Copper Mine, it is stated that, although it has hitherto failed to be a paying undertaking, the final report by Capt. Holman gives fair ground for expecting that this company's interest in it may yet prove to be of adequate value for the sum standing against it—7653*l.* 19*s.* 11*d.* At the Good Hope Mine some very limited operations have been carried on without, so far, any important result. Referring to the financial results of the company's operations during the past six months, it is stated that the general revenue account shows an available profit of the sum of 8121*l.* 16*s.* 10*d.*, which the directors propose to dispose of by paying a dividend at the rate of 10 per cent. per annum, free of income tax, on the capital of the company, 120,000*l.*, which will require 6150*l.*; and carrying forward to the credit of next half-year's account a balance of 1971*l.* 16*s.* 10*d.*

FOREIGN MINES.

ST. JOHN DEL REY.—Advices from the company's agents at Rio state—"No dispatches from Mr. Gordon have come to hand, which we attribute to some Post Office delay."

DON PEDRO.—Mr. F. S. Symons reports—Produce for September 21,924 oits., at 8*s.* 6*d.* per oit., 9317*l.*; cost, 2271*l.*; profit, 7046*l.* It is my pleasing duty for September to report a splendid produce, one that enables us to show a profit of upwards of 7000*l.*, being the best as yet for this year. The works have been carried on with the usual regularity, good duty done in and out of the mine, a little progress made in the shallow and good in the deep adit, and roads put in good order for the approaching wet season. The works have been pushed on with vigour, and the lode excavated yielded splendidly, particularly the north side of No. 5. This body of lode has been proved to be strong and auriferous to water level by our works on it eastward; a small bunch of gold was struck on this curve, which gave about 700 oits., and we have confidence that other and richer bunches will yet be discovered.—First division of October.—Extract from Mr. F. S. Symons' letter of Oct. 18:—Produce, weighed to date, 8370 oits.—Mine: No change of importance has taken place since my last, and the works have been carried on with the usual regularity. The bunchy and rich nature of the No. 5 is becoming more and more demonstrated as we extend on it, and gives strength to the opinion so often brought before you by myself that rich deposits of gold will yet be met with in this curve. On the 14th and 15th, 12 boxes of vein stuff were taken from a line on it touching water level, which gave about 1300 oits. of the precious metal, and we have not yet taken all away westward. The general body of No. 5 continues to yield work above the average, though at times fluctuating.

ANGLO-BRAZILIAN.—Mr. F. S. Symons reports:—Produce: The gold return for September amounts to 3388 oits., or 442 oits. less than that for last month. Produce, 3388 oits. at 9*s.*, 1524*l.*; cost, 1473*l.*; profit, 51*l.* Owing to a falling off in the attendance of natives the works have not proceeded with the usual regularity, and several points in the mine have been under suspension since the early part of the month. The duty accomplished, therefore, has been considerably under that for August, and the produce in consequence less. Still, the latter, amounting to 3388 oits., is sufficiently favourable to enable a small profit to be shown on the month's operations, a result which should be most encouraging, seeing that the quantity of stone treated in September has been 301 tons less than in August, and the standard improved from 2·43 to 2·64 oits. per ton, or 8·64 per cent. First division of October.—Extract from Mr. F. S. Symons's letter, dated Oct. 18:—The operations in the mine are proceeding regularly. The attendance of force is better than when last advised, though still inadequate for our requirements. At Dawson's Canoa and Dawson's shaft the stone continues to yield favourably, and at the deep adit; and Foster's lodes are improving in size and appearance. Indeed, the mine throughout, excepting the Buraca Secco section, is looking well, and had we the requisite number of hands to keep all the points manned good profits would be the result.

ROSSA GRANDE.—Mr. Ernest Hilcke reports—The produce for Sept. amounts to 660 oitavas of gold dust (76 ozs. troy). The operations have been carried on satisfactorily, but owing to a small force the progress has not been speedy. The lode in our present principal stopes above the main level has become very poor: 165 tons have been extracted and treated, and yielded only 192 oitavas of gold, whereas this same lode exceeded an average yield of 8 oitavas per ton in the previous month. In the main level we met with the same mischance; here also the lode became poor and small, and continued so for 3 fms. east beyond our slopes. At this point its auriferous nature improved again, and occasionally gold became visible in the stone, and also the size of the lode increased. The ore extracted and treated amounted to 51 tons, which yielded 468 oitavas of gold, equal to 9·2 oitavas per ton.—First Division of October—Extract from Mr. Ernest Hilcke's letter, dated Oct. 16: The lode in the main level presents little change; it is still split up in small branches, and its size continues from 3 to 4 ft. wide. The occasional visible gold this lode contained has disappeared, and, judging from the ore treated from this point, the auriferous quality of the stone is not so rich as it was at the latter part of the previous month; its yield is not regular, and cannot be depended upon. The lode in the shaft has become more regular again, and its size is increasing fast; it is also getting unusually wet—a very favourable sign.

SAO VICENTE.—Oct. 15: Since my last we have had several showers of rain, which have materially increased our water-power. The lode in No. 2 level west continues to hold its size, and the appearance of the stone has im-

proved. A line has come in which is very hard for boring—in fact, throughout the mine the stone was never so much so as at present in this point, and judging from the great angle which it has now taken (the footwall dipping at an angle of about 40°) I believe ere long we shall have a good lode here.—Jacotinga Formation: At the jacotinga formation we have, I think, intersected the north wall in No. 1 level, or rather cross-cut. As soon as we have properly secured the place with timber, I purpose rising through the jacotinga, not only to be certain that we have cut the north wall, but also to prove the lines in the jacotinga. We shall also extend upon the line, from which we have taken several samples, showing gold in the batea. The bed of jacotinga is about 24 feet wide. The other cross-cut eastward (named No. 2) has intersected a bed of jacotinga (not the one for which this cross-cut was commenced), which has shown some gold in samples taken. The "canoa," referred to in my last, is in its place, and after the strakes are laid down, and the water-course finished, we shall commence to pass such of the jacotinga which promises to give gold.—Force: As our force has not materially increased the works at the Crush and Eastern section have progressed but slowly, these points being worked secondary to No. 2 level west, which I consider offers at present the best prospects.

LUSITANIAN.—Nov. 10: Palhal Mine: In Taylor's engine-shaft below the 120, the lode is worth 2 tons of ore per fathom. Winze No. 77, below the 110, is worth 4 tons per fathom. We are obliged to stop this winze until the water is drained from below.—Basto's Lode: The 120, east of Taylor's, is worth ¾ ton per fathom; and the 120, west of the same, yields 1 ton of ore per fathom. The 110, east of Taylor's, produces ½ ton of ore per fathom. At this point we have a branch going off in the north side, which looks like Mill lode leaving Basto's lode. The lode in the 110, west of Taylor's, is 1½ ft. wide, composed of quartz and stones of ore. In the 110, east of River shaft, the lode is 2 feet wide, composed of a dry flookan and a little country; and the 90 east is of a similar character. The lode in the 70, east of River shaft, is 2½ feet wide, composed of quartz and a little flookan, with copper ore worth 1½ ton per fm. The lode in the 38, west of Perez' shaft, is 6 inches wide, composed of country, flookan, and quartz.—Levels on Branch: The 8, west of winze 75, west of Perez' shaft, is worth ⅛ ton per fathom. The 8, east of winze 75, also yields ⅛ ton per fathom. And the adit, west of Perez' shaft, is worth ¾ ton per fathom.—Ponte Lode: The lode in the 28, east of slide, is 8 inches wide, composed of loose quartz, impregnated with lead and mundic. The 100, west of Taylor's, is suspended. No change has taken place in the character of the cross-cuts. The winze No. 75, below the adit, west of Perez' shaft, is holed, and the men are put to drive the 8 fathom level east and west of it. The stopes are looking just as usual.—Carvalhal Mine: The lode in incline shaft, below the 40, is small and unproductive. We hope, now we have all our pitwork in order, to get on fast with sinking. In the 40, east of incline shaft, the lode is worth ¾ ton of ore per fathom. The 30 east yields 1½ ton. The 20 east produces ¾ ton of ore per fathom. The ground is very favourable. The lode in the 10 east has not been taken down since our last report, but from the appearance of the north wall, as far as seen, we think it worth 1 ton of ore per fathom.—Caunter Lode: The lode in the 40, west of incline shaft, appears to be heaved by a small slide, which came in from the west. We are now driving on its course in search of the lode. In the 30 west the lode is 1½ foot wide, composed of quartz, blende, mundic, and spots of lead.—North Lode: The lode in the deep adit, west of River Caima, is 2 feet wide, composed of quartz and country. In the top adit, west of River Caima, the lode is 4 feet wide, composed of quartz, containing spots of lead and copper ore, also a branch of mundic and iron. There is no particular change in the stopes since last report.

LINARES.—Nov. 7: West of Engine-Shaft: In the 110, driving west of San Tomas shaft, the ground is easy for driving, but the lode is unproductive. The 85, west of Warne's shaft, yields ½ ton of ore per fm.; the lode is large and strong, and letting out much water. The lode in the 85, east of Warne's shaft, contains stones of lead; the ground is hard for driving. The 45, east of San Francisco shaft, produces 2 tons of ore per fathom; this driving opened a rich piece of ground in the past month. The 31, east of San Francisco shaft, is worth 1½ ton of ore per fathom; in this level also a valuable run of ore ground was opened, and the lode still looking well.—East of Engine-Shaft: The 95, east of Taylor's cross-cut, has not in the past month opened ground of any value. The 95, east of Taylor's shaft, produces 1 ton of ore per fathom; the lode has improved in this end lately, and is now looking very promising.—Shafts and Winzes: The lode in San Francisco shaft, sinking below the 31, appears to be disarranged. No. 163 winze, below the 85, is worth ½ ton of ore per fathom; the lode has fallen off very much of late. No. 162 winze, below the 31, yields also ½ ton per fathom; the lode has been small, and of little value lately, but we expect it will improve shortly. No. 164 winze, below the 25, produces 1½ ton of ore per fathom; this new winze is in advance of the 31. We hope to get it down speedily, and drive east and west from the bottom of it; the stopes yielded a good quantity of ore in the past, and are likely to do well in the present month. The surface works and machinery are going on very regularly. We estimate the raisings for November at 275 tons.—Los Quinientos Mine: The lode in the 32, west of Taylor's engine-shaft, is poor at present, but is letting out more water than usual, and looks kindly. The 32, east of Taylor's shaft, yields 1 ton of ore per fathom; this has much improved, and is also letting out much water, and getting easier for driving. The lode in the 32, east of Addis's shaft, is of a very open and promising character, yielding 1 ton of ore per fathom; the ground is easy for driving. The 32, west of Addis's shaft, yields 1 ton per fathom; this is not so productive as when we commenced driving.—Shafts: In Taylor's engine-shaft, sinking below the 32, the sumpmen have done a good month's work. Addis's engine-shaft, below the surface, produces 1½ ton per fathom; there is a good lode in the bottom of the shaft, which is now 32 fathoms deep, and ends are started east and west. In Cox's engine-shaft, sinking from surface, we have put a new pare of men, and hope to get on faster with the sinking. The water is rather strong for the horse-whim.

ALAMILLOS.—Nov. 7: The lode in the 4th level, east of La Magdalena shaft, is small, and the ground hard for driving. The 5th level, east of above shaft, yields 2¼ tons per fm.; the lode is not so good as it has been, but is still of a kindly appearance. The 5th level, west of La Magdalena shaft, opened a great length of valuable lead ground in the past month, but is at present poor. The 5th level, east of Taylor's engine-shaft, yields ½ ton per fm.; the lode has fallen off lately, and now yields good stones of ore in the back of the end. The lode in the 5th level, west of Taylor's engine-shaft, is unproductive. In the 4th level, west of San Andriano shaft, the lode has been disarranged by a cross-conrse, and is again re-forming. The 3d level, west of San Yago shaft, yields ¼ ton per fathom; the lode is gradually improving. The 2d level, west of Judd's shaft, is suspended. The 2d level, east of Judd's shaft, yields ¼ ton of ore per fm.; the lode is divided into two branches; we are now driving on the north part, which looks well. The lode in the 3d level, east of Crosby's shaft, is small and unproductive. In the 3d level, west of Perez' winze, the lode has greatly fallen off in value in the past few days. The lode in the 2d level, west of Morris's shaft, is small and easy for driving, and yields ¼ ton of ore per fathom. The 2d level, east of Henty's shaft, yields 1 ton of ore per fathom; the lode here is not so good as it was in the shaft. The 2d level, west of Henty's shaft, is worth 1½ ton per fm. We expect to open a very long run of good ore ground in this direction.—Shafts and Winzes: In Taylor's engine-shaft, sinking below the 5th level, the men are making good progress. Henty's shaft, sinking below the 1st level, yields 2½ tons of ore per fathom; this has reached the requisite depth for a second level. San Enrique shaft, below the 3d level, is off the lode, and the granite is moderately easy for sinking. Juan's winze, below the 3d level, yields ¾ ton of ore per fathom; the ground is very easy, and the lode contains good stones of ore. The lode in Tomas' winze, below the 4th level, is small, yielding ⅛ ton per fathom; the ground is hard for driving. Agueda's winze, below the 4th level, is worth 2 tons of ore per fm.; this is going down in a large, strong, and productive lode. The stopes, on the whole, have not undergone any unusual fluctuation; some new ones this month are set on, to compensate for others that are worn out, enabling us to keep up the weekly rate of sampling, and to estimate the raisings for November at 250 tons. The machinery and all surface works are proceeding satisfactorily.

VAL SASSAM.—T. Rickard, Nov. 13: The works at Ursera have, since my last report, presented nothing very worthy of note. There is no change in the Cantina end, and, indeed, scarcely anything was done in that end during last month, the men having been for the greater part of the time employed on work connected with the smelting. The stopes employing 10 men have turned out their usual quantity of stuff, but the lode has latterly been less productive than it was, so that the proportion of good hand-picked ore has been lower. From what we know of the piece of ground in which these stopes are working, we do not doubt but that the former rate of yield will speedily be recovered. Our tribute operations are very small; they have diminished since the falling off of the surface pitches, from which a good part of the past year's returns have been obtained, and we do not see how any considerable increase can take place in them until the smelting experiment shall have enabled us to see our way clear to raise the rate of tribute paid, so as to take away our poorer ground. Unless prevented by severe frost, depriving our wheel of the necessary water, it will not be long before it will have been ascertained exactly to what class of ground tribuing may with advantage be extended. At the Roffla the good indications we had are, we fear, turning out deceptive. Early in the month the end, having entered dead ground, we suspended it, and put the men to rise at two points on the back of the level, where the lode looked promising, and contained some good stones of ore. We made about 10 metres of rise at each of these places, and have since opened out a little in the sole of the gallery. A nice little pile of ore was produced from these works, but scarcely enough to give the ground a per fathom value, and we begin to feel disappointed that nothing more valuable has been met with by our researches at this place. At Tospino a part of our tributers continued to work in the surface pitches until the end of last month, and at the Laveries we worked until the 6th of the present month, but were then compelled to dismiss all the workpeople and close the works. The season has lasted to a month later date this year than last. The stopes remain precisely as they were when described last month.

GONNESA.—R. W. Rickard, Nov. 11: San Giovanni Mine—Lead section: The 30 metre level, west from Caroline's shaft, is still unproductive. The same level east has entered good ground; it yields at this time 1 ton of ore per fathom, and promises to improve. Taylor's level west yields 1 ton of ore per fathom; the same level east has not been set to drive. Victor Emanuel level west is in promising ground, although almost unproductive at present. The stopes and tribute pitches in this mine are turning out fairly.—San Giovanni Mine—Calamine Section: We have now increased the number of the miners in this part of the mine. The different points of attack are looking just as when last described; this ore loses about 36 per cent. in calcining. Our miners are becoming much better acquainted with the nature and value of calamine ore, and we are able to set to them now at prices varying according to the percentage of the ore; by this means we shall have the ore much better picked, and taken care of in the mine.—San Giovanneddu Mine: We shall now proceed to put this lead mine in full operation, and I hope before the end of the month to resume the works also on the calamine.—Monte Cane Mine: There is no change worthy of notice taken place in the general aspect of the different stopes on calamine in this mine, some look a little better, while others seem to have somewhat fallen off. The modifications of the road from this mine to Gonnesa are about finished; the cause of the delays in the completion of this work has been the very heavy rains, which fell almost without intermission during the last half of the past month. We shall now be able to carry down the ore to the furnaces with our own cattle, and thus have a regular supply, and economise the cost of carriage. At the Gonnesa dressing and calcining establishment we have two furnaces at work, one on the ore from San Giovanni, and the other on Monte Cane ore. We have suffered some incovenience in our work here also on account of the rain, but now the furnaces are working well and regularly.—Acqua Resi Mine: The stopes at San Georgio are turning out very well, and afford a full supply of ore for one furnace. The end of the Campo Spino level has passed into unproductive ground. We hope, however, that it is only a temporary impoverishment, and that the lode will be found productive again beyond. We have set a company of men to make a rise in the back of this level, just behind the end of the level, to communicate with a small surface shaft, in order to ventilate this piece of ground, and cut it open for stopes; both the shaft and rise are in solid calamine. We do not know the exact width of the lode here, as we have not cut through it so near the end. Another company has been put to sink a winze under this level, near the end of the level: here also the lode is entirely of calamine of excellent quality. These two works, with a surface stope, are giving a full supply of calamine for one furnace. We have resumed our works on the contact lode at San Barbe's level, having set there a winze to sink to facilitate the communication of this level with Emelie's; the lode in the winze is 3 ft. wide, yielding 1 ton of lead and 2 tons of good calamine per fathom. In the course of a few days we intend working on this lode further south, near the boundary of this mine, with Monte Cane (Gessa).—Guttura Pala Mine: A company of miners are employed here in raising calamine. We purpose setting the Enthoven and Francisco levels to drive again. Our returns for October were—Lead ore, 223 tons; calcined calamine ore, 1250 tons.

FORTUNA.—Nov. 7: Canada Incosa Mine: The 110 fathom level, driving east of O'Shea's shaft, yields ⅛ ton of ore per fathom. The lode has failed in this level lately; there are now good stones of ore in the back of the end. In the 100, west of O'Shea's shaft, we expect to intersect the lode this month. The 90, west of Judd's shaft, yields 2 tons of ore per fathom; this is opening out a long run of excellent ore ground. The lode in the 80, west of Judd's, is small, and of little value. In the 80 fathom level cross-cut, south of Henty's shaft, the ground is rather hard for driving. The 70, east of Carro's shaft, yields ¾ ton of ore per fathom; the ground is very hard, and the lode is small. The 50, east of San Pedro's shaft, yields 1 ton per fathom; this is opening moderately productive ground.—Shafts and Winzes: Good labour has been done in Henty's shaft, below the 90, during the past month; we shall, probably, get it down to the 100 fathom level in a fortnight. A cistern has been put in the 70, at Lowndes' shaft, and a new sinking-lift fixed. Diaz's winze, below the 55, yields ¾ ton of ore per lathom; the ground is very hard, and the lode is getting smaller. Casada's winze, below the 40, is going down in a kindly and productive lode, yielding 1 ton of ore per fathom. In Antonio's winze, below the 90, the lode is split into parts in the bottom of the winze.—Los Salidos Mine: The 100 fathom level, west of Morris's engine-shaft, produces 1¼ ton of ore per fathom; the lode has again improved in this end, and has a very kindly appearance. The stuff having been cleared away in the 75, west of Buenos Amigos shaft, we have resumed driving this end, which is worth 2½ tons of ore per fathom. In the 100, east of Morris's engine-shaft, the lode is at present disarranged and unproductive, but in a winze sinking in advance of it the lode is rich. The lode in the 90, east of Cox's shaft, is small and unproductive. The 75, east of San Pablo's shaft, yields 1 ton of ore per fathom; the lode is improving, and has an open and kindly appearance.—Shafts and Winzes: Buenos Amigos shaft, sinking below the 90, is worth 1 ton per fathom. In consequence of the breaking away of some timber, the sinking was hindered in the past month. San Gabriel shaft, below the 90, produces 1½ ton of ore per fathom; this is holed to the 100 fathom level, and will speedily be made available for drawing through. Corzo's winze, below the 90, is worth ½ ton per fathom; this has reached the required depth for the 100 fathom level, and will be holed shortly. The lode in Tomas winze, below the 65, has a kindly appearance, and is fairly productive, yielding 1½ ton of ore per fathom. In Ramon's winze, below the 75, the ground is hard, and the lode small. The ground in Prim's winze is easy, and the lode very good, yielding 3 tons of ore per fathom. The tribute department yielded the estimated quantity of ore in the past month, and is now looking much as usual. The machinery and other surface works are going on very regularly. We estimate the raisings for November at 350 tons.

IMPERIAL SILVER QUARRIES.—Lewis Chalmers, Oct. 19: Thirteen feet of tunnel were completed last week.

RHENISH CONSOLS.—G. Sweet, Nov. 17: Christiana: The drivage east, in the 20 lachter level, will afford 1 ton of lead ore per lachter. In cross-cutting the lode in the 10 lachter level we still find good stones of lead ore, but have not yet reached the hanging wall. Good progress is being made in sinking the engine-shaft. No alteration to mention in the different stopes since my last report.—Bliebach: The drivage west, on the middle lode, in the 10 lachter level, will afford 1½ ton of lead ore per lachter. We have intersected this lode in the cross-cut in the adit level referred to in my last report, and it is affording good stones of lead ore. The different stopes and tribute bargains are the same as last reported on. We have still a good supply of water for Christiana wheel. I will report on Madonna on Thursday next.

PESTARENA.—T. Roberts, Nov. 10: At Pestarena we have a further improvement in the 16, driving southwards towards the Pozzone Mine, on a lode discovered under the slide; it yields now 3 tons of ore per fatham. A trial made shows it to yield 1½ oz. of gold per ton. There is no change in any other points throughout the mine since last report. We succeeded in getting more mills to work; the whole number amalgamating at Pestarena is now 200. At Val Toppa the flat or slide lode continues to be good. We expect to have the pleasure to report of a discovery shortly in one of the cross-cuts now driving; the ground in it is of a very favourable nature.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Devon.

IN the MATTER of the COMPANIES ACT, 1862, and of the EAST BERTHA MINING COMPANY.—By the direction of His Honor, the Vice-Warden, notice is hereby given that, on the 30th day of November inst., at the Registrar's Office, at Truro, in the County of Cornwall, at Eleven o'clock in the forenoon, this Court will PROCEED to MAKE a CALL of THREE POUNDS AND FOUR SHILLINGS PER SHARE on all the contributories of the said company settled on the List of Contributories under Class A; and also on the contributories settled on the said List under Class B, and therein numbered respectively 29 and 42.

All persons interested therein are entitled to attend at the time and place to offer objections to such call. W. MICHELL, Registrar.

Dated Registrar's Office, Truro, 18th November, 1868.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and of the NEW TRELAWNY SILVER-LEAD MINING COMPANY (LIMITED).—By an Order made by His Honor, the Vice-Warden of the Stannaries in the above matter, dated the 12th day of November inst., on the petition of Edward Helson Dingle, of St. Ive, in the county of Cornwall, a creditor, and also a contributory of the said company, it was ORDERED that the said NEW TRELAWNY SILVER-LEAD MINING COMPANY (LIMITED) should be WOUND-UP by the Court under the provisions of the Companies Act, 1862 and 1867. HODGE, HOCKIN, AND MARRACK, Truro

(Agents for Rd. Peter, Launceston, Petitioner's Solicitor).

Dated Truro, November 13, 1868.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN RE WEST WHEAL FRANCES MINE.

TO BE SOLD, pursuant to an Order made in the Cause of PIKE and Another *v.* SMITH and Others, dated the 2d day of October, 1868, at the Registrar's Office, at Truro, on Thursday, the 26th day of November inst., at Two o'clock in the afternoon, the

4 (512th) PARTS or SHARES of the defendant

Of and in the said MINE.

JOSEPH ROBERTS, Truro, Plaintiff's Solicitor.

Dated Registrar's Office, Truro, Nov. 19, 1868.

CHINA STONE AND CLAY WORKS FOR SALE.

MESSRS. KINSMAN AND HOCKADAY are instructed to SELL, BY AUCTION, at the Queen's Head Inn, in St. Austell, Cornwall, on Friday, the 4th day of December next, at Four o'clock in the afternoon, the very valuable CHINA STONE AND CLAY WORKS, known as

GREAT HALWYN AND RESTOWRACK DOWNS CHINA STONE AND CLAY WORKS,

Situate in the parishes of ST. DENNIS and ST. ENODER, in the said county. Together with a water-course, granted for the use of the clay works, and the pits, pans, tanks, sheds, launders, and general working materials and things belonging to the works. The setts and watercourse are respectively held under lease from Lord Falmouth for the term of 14 years, from the 23d June, 1866. The minimum rent is £100, merging in the dues, and the rent for the water-course is £12 per annum. The works are capable of being prosecuted on an extensive scale, and are conveniently situated for the shipment of the produce.

The Auctioneers beg to call the special attention of capitalists to this opportunity of investment, it being well known that an offer of a china-stone sett is of very rare occurrence.

Further information may be obtained on application to WILLIAM WEST, Esq., Tredenham House, Par Station; Mr. THOMAS PEARCE, Trenovissick, Par Station; or to the Auctioneers, St. Austell.—Dated Nov. 19, 1868.

LLANBERIS, CARNARVONSHIRE.

GALLT-Y-LLAN SLATE QUARRY,

Otherwise the LLANBERIS SLATE COMPANY (LIMITED),

Situate in the Village of Llanberis, nearly opposite the famous Dinorwic Quarry, better known as Assheton Smith's, about seven miles from the town of Carnarvon, and two from the terminus of the Carnarvon and Llanberis Railway, which will be opened for traffic in the ensuing spring.

MR. MARSH has been favoured with instructions from the Liquidators and Mortgagees of the LLANBERIS SLATE COMPANY (LIMITED) TO SELL, BY AUCTION, at the Guildhall Coffee House, on Thursday, December 3d, at Twelve, in One Lot, the above

VALUABLE FREEHOLD SLATE QUARRY,

Of 14 floors, in good working order (on which an outlay of from £50,000 to £60,000 has been made, including the purchase of the freehold), comprising about 57 acres of land, slate wharf, manager's house, four workmen's cottages, blacksmith's and joiner's shops, stabling, engine sheds, powder magazine, slate and shelter huts.

Also, the VALUABLE fixed PLANT, consisting of rails and sleepers, iron rope rollers, drums, breaks, cast iron rubbish shoot, turn tables, &c., which will be included in the purchase.

The property may be inspected on application to Capt. SCOONES, on the premises, of whom particulars may be obtained; also, at the Padarn Villa Hotel, Llanberis, Carnarvonshire; of Messrs. WILKINS, BLYTH, and MARSLAND, Solicitors, 10, St. Swithin's-lane, City; and at Mr. MARSH'S offices, No. 54, Cannon-street, E.C.

TO IRONMASTERS, BLAST FURNACE PROPRIETORS, MILLOWNERS, AND OTHERS.

MESSRS. FLETCHER AND BERRIDGE WILL SELL, BY AUCTION, at the Hen and Chickens Hotel, Birmingham, at Three o'clock in the afternoon, on Thursday, the 10th day of December, 1868, a highly valuable high-pressure vertical

BLAST ENGINE,

Now erected at the MOSELY HOLE FURNACES of the CHILLINGTON IRON COMPANY, WOLVERHAMPTON.

The engine is nearly new, and was built by Messrs. Davies, the celebrated engineers, of Tipton. It has a 40 in. diameter and 8 ft. stroke steam cylinder, with blowing cylinder 98 in. diameter and 8 ft. stroke, has powerful double beam 24 ft. 6 in. long, a fly-wheel of 20 ft. diameter, and all the other necessary fittings complete. The engine is in every way well adapted for a blast-furnace, or for mill purposes.

To view, apply to the Chillington Iron Company, Wolverhampton.

A plan may be seen at the offices of the Auctioneers, 16, Bishop-street, Leicester, and further particulars obtained of them; of Mr. JOHN CHILD, Nailstone Colliery, Leicester; of Mr. WILLIAM H. WILKS, Glass Houghton, Normanton; or of Mr. THOMAS SIMPSON, Solicitor, Leeds.

TO CAPITALISTS.

MESSRS. BARNARD, THOMAS, AND CO., have been instructed by the Executors of the Mortgagee, under powers of sale, to SELL, BY PRIVATE CONTRACT, the valuable LEASE, PLANT, and MACHINERY of

THE WRYSGAN SLATE AND SLAB QUARRIES,

Situated in the well-known FESTINIOG RANGE, and in close proximity to the celebrated slate quarries so extensively and profitably worked by the Welsh Slate Company, and others.

This property, known as the TANYGRISIAN ESTATE, contains about FOUR HUNDRED ACRES, through which the blue vein runs, and is traceable for more than a mile in length and about 50 yards in breadth, and is held under lease for a term of 90 years, from the 1st January, 1854, at a dead rent of £100 and no royalty, and to a further annual payment of £50 for wayleave over land belonging to Mrs. Gore; also about ONE HUNDRED ACRES, through which the grey vein runs, held upon a lease of 42 years, of which 38 are unexpired, at a rental of £100, but with a royalty of 1-12th, the dead rent to merge in the royalty when it exceeds that amount. The grey vein is nearly one mile in length, and contains, according to the report of a well-known quarry engineer, over 30,000,000 tons of slate rock.

The facilities for getting the rock are unusually great. A large siding and a grand and well-arranged incline have recently been made at an expense of £5000, connecting the quarry with the railway from Festiniog to Port Madoc, the place of shipment, the cost of conveyance being only 3s. per ton.

The lamina, colour, regularity, and mineralogical composition of the rock in these quarries, and the quality of the slates when prepared for market, are not surpassed by any in North Wales.

There are TWO POWERFUL WATER WHEELS, a STEAM ENGINE, several SLATE TABLES, and other MACHINERY, and the whole property may now be purchased on the most reasonable terms, in consequence of the death of the mortgagee in possession.

For further particulars, application to be made to Messrs. HIGSON, Mining Engineers, 94, Cross-street, Manchester; Messrs. HONEY and HUMPHREYS, Accountants, Ironmonger-lane, London; Messrs. BARNARD, THOMAS, and Co., Accountants, Bristol; or to J. and H. LIVETT, Solicitors, Albion Chambers, Bristol.—Albion Chambers, Nov. 13, 1868.

TO CAPITALISTS.

SLATE QUARRIES FOR SALE IN NORTH AND SOUTH WALES.

MR. GEO. A. H. POTTER has FOR SALE, BY PRIVATE TREATY, FOUR VALUABLE SLATE QUARRIES, called

FOEL FAWR, FOEL FACH, CWM CILAN, AND LLYFNANT,

Situate in the Counties of CARDIGANSHIRE and MONTGOMERYSHIRE.

They are in the immediate vicinity of the railways, shipping wharves, and rivers. Plenty of water to turn any machinery required.

A vein of copper ore runs through a portion of the Foel Fawr property.

For full printed particulars, and to treat, apply to GEO. A. H. POTTER, Auctioneer and Valuer, 17, Orange-street, Swansea.

BY ORDER OF THE MORTGAGEE.

MR. GEO. A. H. POTTER has received instructions to offer FOR SALE, BY PRIVATE TREATY, all that VALUABLE BITUMINOUS STEAM COAL COLLIERY, called

KILLAN,

Situate in the DUNVANT VALLEY, near the thriving Port of SWANSEA.

This is a chance rarely to be met with, as the COAL is of EXCELLENT QUALITY, and being so near a shipping port, can be readily sent to any part of the world.

For reports and particulars, apply to GEO. A. H. POTTER, Auctioneer and Valuer, 17, Orange-street, Swansea, where a plan of the property may be seen.

SLATE QUARRIES FOR SALE.

TO BE SOLD, BY PRIVATE CONTRACT, the SLATE QUARRIES belonging to the

MANX SLATE COMPANY (LIMITED),

Situate at GLENRUSHEN, in the parish of PATRICK, in the ISLE OF MAN.

The quarries are held under a lease from the Crown, dated 12th July, 1863, for 21 years, at a royalty of 1-16th, with a minimum royalty of £50 per annum, to merge into the royalty when it exceeds that amount, with a dead rent of £1 per annum.

The grant is very extensive, containing an area of 6906 acres, all in the clay-slate formation. The quarries have been wrought by means of galleries in the side of the mountains, from which large quantities of roofing slate have been raised and sold. They are supplied with all the necessaries for carrying on an extensive business. The plant, consisting of railways, water-wheels, with slate sawing machines, tools of every kind, manager's residence, cottages for labourers, and is in a fit state for immediate working.

Tenders for the sale of the same will be received by me until the 5th day of December next. A catalogue of the plant, and abstract of the title, will be given on application.

Applications for inspecting the same to be made to the undersigned, or to Capt. CAMERON, Glenfaba House, Peel, Isle of Man, who will show the premises.

SILAS EVANS, Liquidator.

Dated at 15, Waring-street, Belfast, 13th November, 1868.

SLATE QUARRY TO BE LET OR SOLD IN IRELAND.

EXTENSIVE AND VALUABLE LEASEHOLD PROPERTY, held under lease from the Marquis of Waterford, EXPRESSLY for OPENING UP the EXTENSIVE SLATE BED which traverses the MOUNTAIN RANGE, called "THE COMERAGHS," on the LANDS of CLONDONNEL, county of WATERFORD, within four statute miles of KILSHEELAN, where there is every facility for sending off slates by boat or rail, either for sea or inland trade.

A good deal of work has been done, and slates got; but, compared with the extent of this slate property, it may be called a trial only, yet sufficient to prove to those versed in such business that there is good slate and a large field for extensive operations. The ground rises about 1 in 3 to 700 feet, and no machinery wanted for hauling; water for dressing-machines can be had at all times, and from a very high fall.

None but principals dealt with.

Address, GEORGE MOORE, Esq., Coolfin, Portlaw, County Waterford.

GORN MINE, NEAR LLANIDLOES, MONTGOMERYSHIRE.

FOR SALE, BY PRIVATE CONTRACT, THE LEASE (17 years unexpired) of this MINE, together with the VALUABLE MACHINERY, PLANT, and MATERIALS thereon.

The Gorn Mine has yielded large quantities of lead, and will, with comparatively small outlay, no doubt, become dividend-paying at an early period.

The exploration of the property has been suspended mainly in consequence of the death of one of the largest shareholders; but should speculators, knowing the merits of the mine, be disposed to co-operate in its future development, the present company would treat with them on equitable terms.

Address, "Secretary of the Gorn Mine," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

COLLIERY FOR SALE.—A PART or the WHOLE of a valuable COAL PROPERTY, yielding a large net profit per ton on the present output of upwards of 500 tons per week, which with the extended workings (on the point of completion) will shortly be increased to, at least, 3000 tons, TO BE SOLD, on terms to pay a good present return, which will be progressively increased to 15, 20, and 25 per cent,

The proprietor, being about to retire from active business, will sell the whole or part of his interest, in the latter case continuing his general superintendence. If necessary, the property could be dealt with by the co-operation of three or four gentlemen.

Apply to Messrs. FEARON, CLABON, and FEARON, Solicitors, 21, Great George-street, Westminster.

NORTH WALES—QUEEN'S FERRY, FLINT.

CLOSE TO THE RAILWAY.

TO BE SOLD OR LET, DESIRABLE FREEHOLD MANUFACTURING PREMISES, with ENGINE-POWER and LAND.—A plot of about one acre, with substantial factories, engine-house chimneys, stable, outbuildings, and sheds, suitable for any manufacturing purpose. ENGINE of most recent construction, and BOILER nearly new.

For further particulars, apply to JOHN TEMPLE, 32, Redcross-street, Liverpool.

ENGINES FOR SALE.

FOR SALE, ONE 54 in. cylinder PUMPING ENGINE, 9 feet stroke, equal beam, with or without TWO 12 ton BOILERS.

Also ONE 36 in. PUMPING ENGINE, 9 ft. stroke, with or without a 10 ton BOILER. With an addition of ONE 8 ton BOILER also FOR SALE. To be sold cheap.

Apply to MICHELL and JENKIN, Engineers, Redruth.

FOR SALE,—A FIRST-CLASS SECONDHAND 8-horse power PORTABLE STEAM-ENGINE, of recent construction, by eminent makers.

NEW PORTABLE STEAM-ENGINES, from 5 to 25-horse power, of the highest order, on advantageous terms. Prize Medals awarded—Hamburg, 1863; Paris, 1867.

Apply to BARROWS and STEWART (late Barrows and Carmichael), Engineers, Banbury.

Aldershot.

MEAT FOR HOSPITALS.

TENDERS will be RECEIVED at this Office until noon on Friday, the 27th November, 1868, for the SUPPLY of MEAT for HOSPITALS for five months, from 1st January, 1869, at Aldershot, and within the command.

Forms of tender, and the conditions of contract, can be obtained on application by letter, or in person, at this office, or at the office of the principal purveyor, where any further information, as to probable consumption, &c., can be furnished.

R. ROUTH,
Deputy Commissary-General.

Commissariat Office, South Camp, Aldershot, Nov. 14, 1868.

Contracts for Fresh Ox Beef.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that on TUESDAY, the 1st December next, at Twelve o'clock at noon, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING (under separate contracts) all such quantities of

FRESH OX BEEF

As may be demanded for the use of Her Majesty's ships and vessels at the following places, from the 1st January to the 30th June, 1869, both days included, viz.:

ENGLAND, &c.

Berwick	Jersey and Guernsey	Plymouth (oxen)
Cowes	Littlehampton	Portsmouth (ditto)
Dartmouth	Liverpool	Sheerness (ditto)
Exmouth	London Bridge to Woolwich, inclusive	Ramsgate
Falmouth	Lymington	Scilly
Fleetwood	Milford Haven, Pembroke, and Pater	Southampton
Gravesend	Netley	Swansea
Greenhithe	Newhaven	Weymouth
Harwich	Penzance	Whitstable
Holyhead	Portland and Portland Roads	Yarmouth (North).
Hull, Hawke Roads, and in the Humber		

SCOTLAND.

Aldrishaig	Granton
Greenock	Queensferry.

IRELAND.

Bantry	Killibegs	Queenstown and Kinsale
Belfast & Carrickfergus	Kingstown and Dublin	Rathmullen
Castletownsend	Limerick	Valentia
Foynes	Lough Foyle	Waterford
Galway	Lough Swilly	Westport.
Kilrush	Mill Cove (Berehaven)	

N.B.—The contractors are to supply good, fat, well-fed Ox Beef, as NO HEIFER MEAT will be admitted.

The Lords Commissioners of the Admiralty reserve to themselves an unlimited power of selection in accepting the tenders.

Particular attention is called to the revised conditions of the Sheerness Contract, which is to include supplies to all ships and vessels between Chatham and the Great Nore, both inclusive; also the Naval Barracks at Sheerness.

Parties tendering for Portsmouth, Plymouth, and Sheerness are to specify in their tenders a rate per 100 lbs. for live oxen, delivered in the usual manner; and no attention will be paid to any offers not so made.

Separate tenders must be made for each port, and at a rate per 100 lbs., and no attention will be paid to any offers not so made. Contracters, in claiming payment for the supplies of beef, are to make out their invoices in pounds at per 100 lbs.

The cattle under the Sheerness contract to be slaughtered in the Admiralty slaughter-house at Sheerness, for Falmouth on the spot, and for Portland not farther from that port than Weymouth; the contractors for Portland and Dartmouth are also to deliver the meat on board H.M. ships and vessels.

The contractors for Portland and Weymouth are to reside at Portland or Weymouth.

The contractor for any of the other places is to reside on the spot, or to have an agent resident there, whose name and address must be given on the tender.

Conditions of the contracts may be seen in the lobby of the Department of the Controller of Victualling, Admiralty, Somerset House, W.C.; or by applying to the superintendents of the victualling establishments at Deptford, Gosport, and Plymouth; the superintendents of Her Majesty's Dockyards at Woolwich, Chatham, Sheerness, and Pembroke; the Naval and Victualling Storekeeper at Haulbowline; the officers conducting the packet service at Liverpool and Southampton; the Secretary to the Postmaster-General, Dublin; to the collectors of Her Majesty's Customs at

Belfast	Harwich	Ramsgate
Berwick	Hull	Scilly
Cowes	Jersey and Guernsey	Swansea
Dartmouth	Londonderry (for Lough Foyle and Lough Swilly)	Waterford
Falmouth	Newhaven	Westport
Fleetwood	Penzance	Weymouth
Galway	Portland and Portland Roads	Yarmouth.
Greenock		

And to the postmasters at each of the other places.

Forms of tender may also be obtained on application at the lobby of the Department above mentioned, or to the proper officers at either of the above places.

No tender will be received after Twelve o'clock at noon on the day of treaty, nor any noticed unless made on the printed form provided for the purpose; but it will not be necessary that the party tendering or an agent appointed by him should attend at this office, as the result of the offer received from each person will be communicated to him and to his proposed sureties in writing.

Every tender must be delivered at the Department of the Controller of Victualling, Admiralty, Somerset House, and signed by two responsible persons, engaging to become bound with the person tendering in the sum of £1500 for the due performance of each of the contracts for Sheerness, Portsmouth, Plymouth, and Queenstown and Kinsale; and in the sum of £300 for each of the other contracts.

The contractors to pay half the amount of the stamps on their contracts and bonds.

By order,
ANTONIO BRADY,
Registrar of Contracts and Public Securities.

Contract Department, Admiralty, Somerset House, Nov. 5, 1868.

Contracts for Vegetables.

CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.

THE COMMISSIONERS for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that on TUESDAY, the 1st of December next, at Twelve o'clock at noon, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING all such quantities of

VEGETABLES

As may be demanded for the use of Her Majesty's ships and vessels at the following places, from the 1st April, 1859, to the 31st March, 1872, both days included, viz.:

ENGLAND, &c.

Berwick	Hull, Hawke Roads, and in the Humber	Plymouth
Chatham to Gillingham, inclusive	Jersey and Guernsey	Sheerness, from below Gillingham to the Great Nore, inclusive
Cowes	Littlehampton	Ramsgate
Dartmouth	Liverpool	Southampton
Exmouth	London Bridge to Woolwich, inclusive	Swansea
Falmouth	Milford Haven, Pembroke, and Pater	Weymouth
Gravesend	Portland and Portland Roads	Whitstable
Greenhithe		Yarmouth (North).
Harwich		
Holyhead		

SCOTLAND.

Granton	Greenock	Queensferry.

IRELAND.

Bantry	Kingstown and Dublin	Tarbert
Belfast	Lough Foyle	Waterford
Galway	Mill Cove (Berehaven)	Westport.
Kilrush	Queenstown & Kinsale	

Separate tenders must be made for each port, and at a rate per 100 lbs. instead of at per cwt., and no attention will be paid to any offers not so made. Contractors in claiming payment for vegetables supplied are to make out their invoices in pounds at per 100 lbs.

The Lords Commissioners of the Admiralty reserve to themselves an unlimited power of selection in accepting the tenders.

Conditions of the contracts may be seen in the lobby of the Department of the Controller of Victualling, Admiralty, Somerset House, W.C.; or by applying to the superintendents of the victualling establishments at Deptford, Gosport, and Plymouth; the superintendents of Her Majesty's Dockyards at Woolwich, Chatham, Sheerness, and Pembroke; the Naval and Victualling Storekeeper at Haulbowline; the officers conducting the packet service at Liverpool and Southampton; the Secretary to the Postmaster-General, Dublin; to the collectors of Her Majesty's Customs at—

Belfast	Greenock	Ramsgate
Berwick	Harwich	Swansea
Cowes	Hull	Waterford
Dartmouth	Jersey and Guernsey	Westport
Falmouth	Londonderry (for Lough Foyle)	Weymouth
Galway		Yarmouth.

And to the postmasters at each of the other places.

Forms of tender may also be obtained on application at the lobby of the Department above mentioned, or to the proper officer at either of the above places.

No tender will be received after Twelve o'clock on the day of treaty, nor any noticed unless made on the printed form provided for the purpose; but it will not be necessary that the party tendering, or an agent appointed by him, should attend at this office, as the result of the offer received from each person will be communicated to him and his proposed sureties in writing.

Every tender must be delivered to the Department of the Controller of Victualling, Admiralty, Somerset House, and signed by two responsible persons, engaging to become bound with the person tendering in the sum of £100 for each of the contracts.

The contractors to pay half the amount of the stamps on their contracts and bonds.

By order,
ANTONIO BRADY,
Registrar of Contracts and Public Securities.

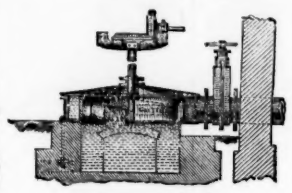
Contract Department, Admiralty, Somerset House, Nov. 5, 1868.

GWYNNE & Co.'s IMPROVED CHAIN-PUMP,
Worked direct by steam-Engine.

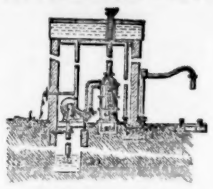
These pumps work without valves or packing, and raise a considerable quantity of water. They will lift sand, mud, or grit without choking, and require only very inexpensive repairs.

GWYNNE & Co.'s DOUBLE-ACTING PUMPING-ENGINE.
As supplied to the Admiralty Graving Docks, Malta, to lift from 200 to 2000 gallons per minute. The engine is of inverted vertical cylinder construction. The pump barrel and piston are of gun-metal, and the whole very strong and compact.

GWYNNE & Co.'s IMPROVED PLUNGER HAND PUMP.
A very neat and extremely compact arrangement; will work for years without getting out of order. These pumps are peculiarly adapted for mines, for which great numbers have been supplied in situations where no other pump could be applied for want of space. They are equally adapted for use as feed-pumps, by driving them with strap from a rigger in place of the fly-wheel.



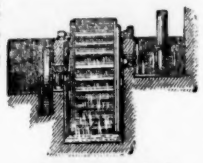
GWYNNE & Co.'s IMPROVED TURBINE WATER-WHEEL.
Compact, easy to erect, economical, simple, and perfectly adapted to all situations. Made of every power from 1 to 300 horse. These turbines are adapted for every class of work. Prices on receipt of particulars.



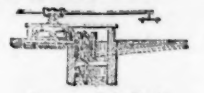
GWYNNE & Co.'s PATENT COMBINED STEAM-PUMP,
As Applied to Railway Stations.
The vertical boiler supplies the engine with steam, the pump discharging the water lifted from the well into the tank above, whence it may be drawn as occasion requires, for feeding locomotives, washing the carriages, as a fire-engine, &c. Estimates given.

GWYNNE & Co.'S IMPROVED PORTABLE STEAM-ENGINE.
Light, simple in construction, durable, and economical, and very superior to "agricultural" engines. From 2½ to 30 horse power.

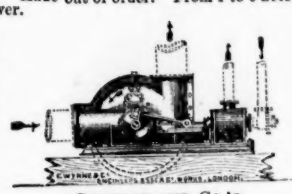
GWYNNE & Co.'s PATENT WIND-POWER PUMPING MACHINERY.
Designed for Drainage and Irrigation Purposes
Suitable also for supplying the mansions of noblemen or gentlemen. Works continuously day and night without attention. Made from ½ to 20 horse power.



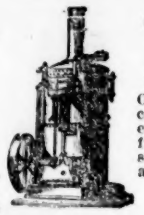
GWYNNE & Co.'s PATENT WATER POWER PUMPING MACHINERY.
Extremely useful wherever water-power is available. The centrifugal pump is worked by gear from the water-wheel. Suitable for supplying country mansions with water. No expense when once fitted. Made of all powers.



GWYNNE & Co.'s IMPROVED BULLOCK OR HORSE POWER PUMPING MACHINERY.
For situations where steam, water, or wind power are not available. Portable, easy to erect, and not liable to get out of order. From 1 to 6 horse power.

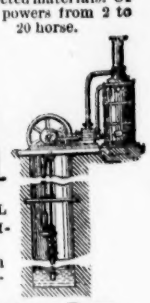


GWYNNE AND Co.'S COMBINED STEAM-ENGINE AND PATENT CENTRIFUGAL PUMP.
Small and powerful, low in cost, economical in work. No skilled labour required. Inexpensive foundations. First Prize Medal awarded at Paris last year for this arrangement.



GWYNNE & Co.'s IMPROVED VERTICAL STEAM-ENGINE.
Occupies little space, compact, safe, and easy to work. Made from the very best selected materials. Of all powers from 2 to 20 horse.

GWYNNE & Co.'s IMPROVED HORIZONTAL HIGH-PRESSURE STEAM-ENGINE.
With or without expansion gear, for economical working. From 4 to 100 h. p.



GWYNNE & Co's IMPROVED DEEP WELL PUMP.
Worked direct by steam-engine at the mouth of the well. This arrangement is invaluable in situations where, from peculiar circumstances, the centrifugal pump is inapplicable.

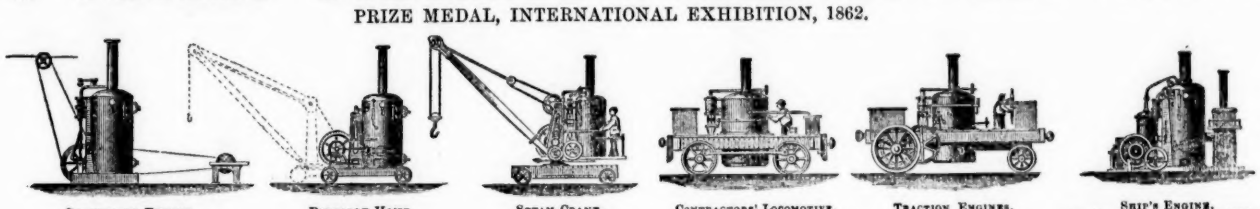
Large and fully Illustrated Catalogues sent on receipt of 12 postage stamps

ELEVEN PRIZE MEDALS, taken at the Exhibitions of the Principal Cities of the World, TESTIFY TO THE GREAT EXCELLENCE OF THIS MACHINERY.

☞ TO PREVENT MISTAKES, PLEASE ADDRESS IN FULL—
GWYNNE AND CO.,
HYDRAULIC AND MECHANICAL ENGINEERS, ESSEX STREET WORKS, STRAND, LONDON, W.C.

CHAPLIN'S PATENT PORTABLE STEAM ENGINES AND BOILERS.

PRIZE MEDAL, INTERNATIONAL EXHIBITION, 1862.



Stationary Engine, From 1 to 30 horse power. No building required.
Portable Hoist, 1 to 30-horse power. With or without jib.
Steam Crane, 30 cwts. to 20 tons. For wharf or rail.
Contractors' Locomotive, 6 to 27-horse power. For steep inclines and quick curves.
Traction Engines, 6 to 27-horse power. Light and heavy
Ship's Engine, Winding, Cooking, and Distilling. Passed by Government for half water.

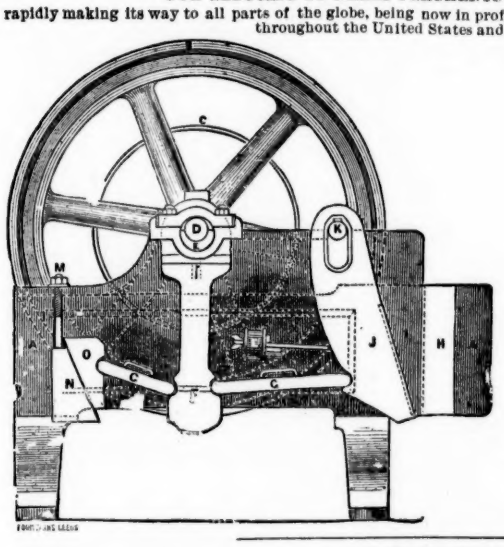
ENGINES of each class KEPT IN STOCK FOR SALE or HIRE, and all GUARANTEED as to EFFICIENCY, MATERIALS, and WORKMANSHIP.
WIMSHURST AND CO., ENGINEERS, LONDON STREET, COMMERCIAL ROAD, LONDON, E. (at Stepney Station of Blackwall Railway.)

IMMENSE SAVING OF LABOUR.
TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, McADAM ROAD MAKERS, &c., &c.

BLAKE'S PATENT STONE BREAKER,

OR ORE CRUSHING MACHINE,
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—



The Parys Mines Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Morcom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.
For the Parys Mining Company, JAMES WILLIAMS.
H. R. Marsden, Esq.

Ecton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaws about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery.
H. R. Marsden, Esq. —— THOS. GOLDSWORTHY & SONS.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly,—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.

Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes for fine road metal, free from dust. Messrs. ORD and MADDISON, Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.
JOHN LANCASTER.

Ovoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS.

General Frémont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or $75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.

For circulars and testimonials, apply to—

H. R. MARSDEN, SOHO FOUNDRY,

MEADOW LANE, LEEDS,
ONLY MAKER IN THE UNITED KINGDOM.

CAUTION!

BLAKE'S PATENT STONE BREAKER,

In Chancery.

BLAKE v. ARCHER, NOVEMBER 12, 1867.

His Honour the Vice-Chancellor WOOD having found a VERDICT in FAVOUR of the PLAINTIFFS in the above Cause, establishing the VALIDITY of BLAKE'S PATENT, and made a DECREE for an INJUNCTION to RESTRAIN the DEFENDANTS, Messrs. THOMAS ARCHER and SON, of Dunston Engine-Works, near Gateshead-on-Tyne, from INFRINGING such PATENT, and ordering them to pay to the Plaintiffs the costs of the Suit.

ALL PERSONS are hereby CAUTIONED against MANUFACTURING, SELLING, or USING any STONE BREAKERS similar to BLAKE'S, which have not been manufactured by the Plaintiffs. Application will forthwith be made to the Court of Chancery for INJUNCTIONS AGAINST ALL PERSONS who may be found INFRINGING BLAKE'S PATENT after this notice.

SOLE MAKER IN ENGLAND,

H. R. MARSDEN, SOHO FOUNDRY, MEADOW LANE, LEEDS.

THE NEW PATENT DOUGLAS TURBINE WHEEL.

Messrs. G. H. LORD and Co. beg respectfully to call the attention of all parties interested in water power to their

NEW PATENT DOUGLAS TURBINE WHEEL,

The unrivalled success of which is now established beyond a doubt. These TURBINES are now working on falls from 18 inches to about 100 feet, and are found to give the highest percentage of power of any Water-wheel Turbine or Engine yet brought before the public, while from the simplicity of their construction they entail a proportionate decrease of amount of outlay, repair, &c.
All applications to be addressed to the sole proprietors and makers,—

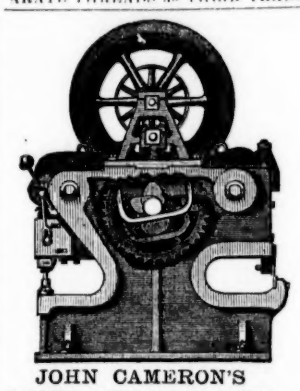
G. H. LORD AND CO., IRON FOUNDERS AND ENGINEERS,

ALBION FOUNDRY, EAST STREET, or at their Offices, BASINGHALL STREET, LEEDS.

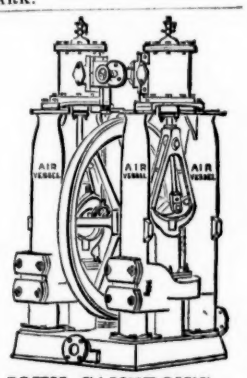
BICKFORD'S PATENT SAFETY FUSE

Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXPOSITION" held in Paris, in 1855; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; and at the "UNIVERSAL EXPOSITION, in Paris, 1867.

BICKFORD, SMITH, AND CO., TUCKINGMILL, CORNWALL, MANUFACTURERS of PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—
EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as THEIR TRADE MARK.



JOHN CAMERON'S
PATENT DOUBLE CAM LEVER PUNCHING and SHEARING MACHINE,
1¼ × 1¼ in. × 24 in.=8 tons, £185.
WORKS,
EGERTON STREET, HULME, MANCHESTER.



JOHN CAMERON'S
STEAM PUMPS
From 2 to 12 in. diameter,
SINGLE AND DOUBLE-ACTING
WORKS,
EGERTON STREET, HULME, MANCHESTER.

CARLISLE BISCUIT COMPANY.

CARLISLE BISCUIT COMPANY.—WHOLESALE AND EXPORT BISCUIT MANUFACTURERS, CARLISLE, & 56, CITY ROAD, LONDON. For twenty years their biscuits have maintained a high reputation. For export they are specially prepared, so as to keep in any climate. To wholesale buyers a liberal discount is allowed. Price lists forwarded on application.

MEAT BISCUITS FOR DOGS.

MEAT BISCUIT FOR DOGS, made by the CARLISLE BISCUIT COMPANY, is undoubtedly the best and cheapest food for dogs that has ever been introduced. It is equally adapted for sporting dogs, yard dogs, or for pets. It requires no cooking, and, without any other food, keeps dogs in the highest condition. Many of the prize-taking dogs at the last Birmingham show were fed, from puppies, on this biscuit. Price 20s. per cwt. at Carlisle; or at their depôt, 56, City-road, London, 22s. per cwt. Post-office orders payable to WILLIAM SLATER, Carlisle. Sold by corn chandlers everywhere. Book of testimonials from well-known country gentlemen, sent on application. Agents wanted. WILLIAM SLATER Managing Director.

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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500	Alderley Edge, c, Cheshire*	10 0 0	—		10 1 8	0 10 0	July 1868
200	Botallack, t, c, St. Just	91 5 0	—		488 15 0	5 0 0	May 1866
4000	Brookwood, c, Buckfastleigh	1 11 0	—		0 12 6	0 2 6	Aug. 1868
1000	Bronfloyd, l, Cardigan*	12 0 0	—		10 7 0	0 6 0	Oct. 1868
5094	Bwlch Consols, s-l, Cardigan	4 0 0	—		0 5 0	0 5 0	June 1868
6400	Cashwell, l, Cumberland*	2 10 0	—		0 3 0	0 1 6	Aug. 1868
916	Cargoll, s-l, Newlyn	15 5 7	20		15 5 0	0 10 0	Oct. 1868
1280	Chanticleer, l,	0 7 8	—		0 1 0	0 0 6	Nov. 1868
2450	Cook's Kitchen, c, Illogan‡	19 14 9	13	11½ 12	1 12 0	0 5 0	Oct. 1868
509	Creegbrawse and Penkevil, t	—	—		2 5 0	1 5 0	April 1868
867	Cwm Erfin, l, Cardiganshire*	7 10 0	—		29 3 0	0 15 0	Oct. 1868
128	Cwmystwith, l, Cardiganshire	60 0 0	—		383 10 0	2 0 0	Aug. 1868
280	Derwent Mines, s-l, Durham	300 0 0	—		177 0 0	2 10 0	July 1868
1024	Devon Gt. Consols, c, Tavistock†	1 0 0	—	370 390	1120 0 0	5 0 0	Nov. 1868
656	Ding Dong, t, Gulval‡	49 14 6	19	17 19	0 10 0	0 10 0	Sept. 1867
358	Dolcoath, c, t, Camborne	128 17 6	380	360 380	857 10 0	5 0 0	Oct. 1868
6144	East Caradon, c, St. Cleer†	2 14 6	5¼	4⅞ 5⅛	14 11 6	0 2 0	July 1867
300	East Darren, l, Cardiganshire	32 0 0	—		160 10 0	2 0 0	July 1868
128	East Pool, t, c, Pool, Illogan	24 5 0	—		447 10 0	5 0 0	Nov. 1868
1906	East Wheal Lovell, t, Wendron	3 9 0	8¾	8¼ 8¾	4 1 6	0 10 0	May 1868
2800	Foxdale, l, Isle of Man*	25 0 0	—		72 0 0	0 10 0	Sept. 1868
5000	Frank Mills, l, Christow	3 18 6	3½	3¼ 3½	3 5 6	0 5 0	Feb. 1866
3950	Gawton, c, Tavistock	3 10 6	1½	1¼ 1½	0 3 0	0 3 0	Jan. 1868
15000	Great Laxey, l, Isle of Man*	4 0 0	21½	20½ 21½	9 5 0	0 10 0	Sept. 1868
5908	Great Wheal Vor, t, c, Helston†	40 0 0	13½	12 13	13 11 0	0 7 6	Sept. 1868
1024	Herodsfoot, l, near Liskeard†	8 10 0	46	44 46	48 0 0	1 10 0	Oct. 1868
6000	Hingston Down, c, Calstock†	5 10 6	—		0 10 0	0 5 0	April 1866
165	Levant, c, t, St. Just	10 8 1	—		1095 0 0	2 0 0	July 1868
400	Lisburne, l, Cardiganshire	18 15 0	—		509 0 0	3 0 0	July 1868
3000	Maes-y-Safn, l, Flint*	20 0 0	—		4 0 0	0 5 0	Oct. 1868
9000	Marke Valley, c, Caradon	4 10 6	9½	9 9½	4 14 0	0 5 0	Oct. 1868
3000	Minera Boundary, l, Wrexham*	1 0 0	—		0 13 0	0 3 0	Mar. 1866
1800	Minera Mining Co. l, Wrexham*	25 0 0	175		239 13 0	6 0 0	Aug. 1868
20000	Mining Co. of Ireland, c, l, cl.	7 0 0	13½	13⅝ 13½	—	9 p.ct.	July 1868
40000	Mwyndy Iron Ore*†	3 5 0	—		0 8 6	0 2 0	Mar. 1868
200	Parys Mines, c, Anglesey*	50 0 0	—		162 10 0	2 10 0	Aug. 1868
12800	Prince of Wales, t, Calstock	0 12 6	2	36s. 37s. x d	0 8 6	0 1 0	Nov. 1868
1120	Providence, t, Uny Lelant†	10 6 7	28	25 27	85 12 6	0 10 0	Sept. 1868
512	South Caradon, c, St. Cleer†	1 5 0	—		597 10 0	5 0 0	Oct. 1868
6000	South Darren, l, Cardigan*	3 6 6	—	1½ 1¾	0 13 0	0 1 6	Aug. 1868
937	South Wh. Crofty, c, Illogan	24 10 10	13		1 0 0	0 10 0	Sept. 1868
496	So. Wh. Frances, c, Illog.†‡	18 18 9	20		374 13 6	1 0 0	Mar. 1868
508	Summer Hill, l, Mold	3 18 6	—		2 5 6	0 5 0	Feb. 1868
6000	Tincroft, c, t. Pool, Illogan†	9 0 0	17	16 17	19 16 0	0 5 0	Sept. 1868
2000	Trumpet Cons., t, Helston	11 10 0	14		13 10 0	0 10 0	Oct. 1868
3000	W. Chiverton, l, Perranzabuloe†	10 0 0	62	62 64	29 7 6	2 0 0	Aug. 1868
5000	West Godolphin, t, c, Breage	0 1 0	—		0 2 0	0 2 0	Dec. 1867
400	W. Wheal Seton, c, Camborne†	47 0 0	195	175 185	610 0 0	5 0 0	Oct. 1868
512	Wheal Basset, c, Illogan†	5 2 6	75		632 10 0	1 0 0	June 1868
1024	Wheal Friendship, c, Tavistock	20 0 0	—		300 10 0	0 10 0	Nov. 1866
512	Wheal Jane, s-l, Kea	10 10 0	42	40 41	—	1 0 0	July 1868
4295	Wheal Kitty, t, St. Agnes	5 4 6	3½	3½ 3¾	3 9 0	0 2 0	Aug. 1868
1024	Wheal Mary Ann, l, Menheniot†	8 0 0	20	19 20	66 0 0	0 17 6	Sept. 1868
80	Wheal Owles, t, St. Just‡	70 0 0	—		350 13 0	7 10 0	Feb. 1868
396	Wheal Seton, t, c, Camborne	58 10 0	52½	50 52½	254 15 0	2 0 0	Feb. 1868
3000	Whitewell Lead, Clitheroe*	0 5 0	—		1 0 0	0 10 0	Dec. 1867
17000	Wicklow, c, i, Wicklow	2 10 0	11	10⅛ 10	49 1 0	0 5 0	Oct. 1868

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
35000	Alamillos, l, Spain*†	2 0 0	1½	1 1⅛	0 4 6	0 2 0	Sept. 1868
20000	Australian, c, South Australia†‡	7 7 6	—		0 1 6	0 0 6	Aug. 1868
15000	Cape Copper Mining*†	7 0 0	12¼		3 2 6	0 10 0	Feb. 1868
30000	Central American Association*†	1 10 0	1¼		—	—	
76162	Don Pedro North del Rey*†‡	0 14 0	4	4⅛ 4⅜	1 0 3	0 3 0	Sept. 1868
70000	English and Australian, c‡	2 10 0	—		—	0 1 0	Feb. 1868
25000	Fortuna, l, Spain*†	2 0 0	2		1 11 10	0 2 6	Sept. 1868
20000	Gen. Mining Assoc., Nova Scotia†	20 0 0	—		23 10 0	0 15 0	June 1867
10000	Gonnesa, l.*	5 0 0	—		10 per cent.		Aug. 1868
68000	Kapunda Mining Co., Austra†‡	1 0 0	—		0 1 10	0 0 6	Nov. 1868
15000	Linares, t, Spain*†	3 0 0	3		11 15 0	0 3 4	Sept. 1868
50000	Panulcillo, c, Chili*†	3 0 0	—		10 per cent.		Yearly.
6000	Peel River Land and Mineral*†	100 0 0	—		—	—	
10000	Pontgibaud, s-l, France†	20 0 0	12		5 6 2	0 11 11	May 1868
100000	Port Phillip, g, Clunes†	1 0 0	2	1¾ 2	1 3 0	0 1 0	Oct. 1868
120000	Scottish Australian Min. Co.†	1 0 0	1⅛		8 per cent.		May 1868
11000	St. John del Rey, Brazil*†	15 0 0	18	17½ 18	81 10 0	4 5 0	Dec. 1867
13500	Vancouver Coal Mining*†‡	6 0 0	9		2 2 6	—	Nov. 1868
50000	Victoria (London) [25000 £1 pd., 25000 12s. 6d. pd.]				0 9 7	0 0 7	July 1868
40000	West Canada Mining Co.*	1 0 0	—		0 19 6	0 2 6	May 1866

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
50000	Anglo-Argentine, s, Argentine Republic*	1 0 0	—		
100000	Anglo-Brazilian, g*†	0 10 0	½		Nov. 1866
12500	Anglo-Italian, g*†	0 10 0	¾		Jan. 1868
20000	Australian United, g	1 0 0	—		Mar. 1868
2464	Burra Burra, c, South Australia‡	5 0 0	—		
20000	Capula, s, Mexico*†	1 17 6	1¾		May 1868
30000	Chontales, g, s, Nicaragua*†	5 0 0	2¾	2½ 2¾	Mar. 1868
12000	Cobre Copper Company, c, Cuba†‡*	45 10 0	—		Jan. 1868
10000	Coplapo Mining Company, Chili†‡	16 10 0	—		
10000	Coplapo Smelting, Chili*	10 0 0	—		April 1866
300	Copper Miners' Co. of South Australia* [150 £100 pd., 150 £70 pd.]				Nov. 1866
15000	El Chico Silver Mining and Reduction Company*	5 0 0	—		Nov. 1866
40000	Fortune Copper Mining Co. of Western Australia	2 0 0	—		Fully pd.
50000	Frontino and Bolivia, g, New Granada*†	1 17 6	¾	9s. 11s.	May 1868
80000	Great Northern, c, South Australia†	1 11 6	—		Sept. 1862
50000	Javali, g, Nicaragua	1 0 0	—		June 1868
7927	Lusitanian (Portugal)†‡	2 15 0	—		Dec. 1866
83640	Mariquita, g, s, New Granada	1 0 0	—		Feb. 1868
12500	Nerbudda Coal and Iron, India*†	6 0 0	3½		Dec. 1867
51000	New Quebrada, c, Venezuela*†	4 4 0	—		
15000	Otea, c, New Zealand*	2 0 0	—		Fully pd.
80000	Pestarena United, g, Italy*†	2 17 6	1¼		
10178	Rhenish Consolidated, l [6000 £5 pd., 4178 £2 10s. pd.]	—	—		May 1866
100000	Rossa Grande, g, Brazil*†	0 14 0	1⅜	1⅛ 1⅜	June 1867
15000	San Pedro del Monte, s, Mexico*	4 0 0	—		Sept. 1866
10000	San Roque, l, Spain	5 0 0	—		Fully pd.
10000	Sao Vicente, Brazil*†	1 0 0	—		Oct. 1868
100000	Taquaril, g, Brazil*	0 7 6	⅝	½ ⅝	Oct. 1868
6000	Terreseu, s-l, Isle of Sardinia	2 0 0	—		
43174	United Mexican, s, Mexico†‡*	28 5 2	2⅛	1⅞ 2⅛	May 1868
30000	Val Antigoria, g, Italy*	1 2 6	—		
6000	Val Sassam, s, c, l, Italy*†	8 0 0	—		Aug. 1868
45000	Victor Emanuel, c, Italy*	1 0 0	—		Fully pd.
20000	Washoe, g, Nevada†	5 0 0	—		Fully pd.
80000	Worthing, c, South Australia*†	1 0 0	⅜		Fully pd.
75000	Yorke Peninsula, South Australia	1 0 0	—		Fully pd.
45000	Yudanamutana, c, South Australia*†‡	3 0 0	2¼	2⅛ 2⅜	Fully pd.

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
12000	Brynpostig, Montgomery, l*	1 0 0	—		
1000	Carn Brea, c, t, Illogan‡	30 0 0	20	17 19	June 1868
3000	Chiverton, l, Perranzabuloe	10 15 0	4½	4¼ 4½	Aug. 1868
3000	Chiverton Moor, l, Perranzabuloe	6 8 6	6½	6¼ 6½	Oct. 1868
2880	Clifford Amalgamated, c, Gwennap‡	40 17 6	—	4 5	Oct. 1868
12800	Drake Walls, t, Calstock‡	2 5 0	⅞	15s. 17s.	Dec. 1866
512	East Basset, c, Redruth†‡	35 15 0	9	8 9	July 1868
6000	East Carn Brea, c, Redruth‡	4 0 0	⅜	7s. 9s.	June 1868
6000	East Grenville, c, Camborne	4 2 6	4	3¾ 4	Nov. 1868
4000	East Wheal Russell, c, Tavistock†	13 13 6	—		Oct. 1868
6144	Gonamena, c, St. Cleer	7 11 3	—		Oct. 1868
5000	Great North Downs, c, Redruth	6 13 0	2¼	2¼ 2½	Feb. 1867
4800	Great Retallack, s-l, b, Perranzabuloe	2 19 6	3		Oct. 1868
5143	Great South Tolgus, c, Redruth	1 8 0	—		April 1868
1798	Great Wheal Fortune, t, Breage	31 7 4	—		Mar. 1868
400	New Wheal Seton, c, Camborne	60 10 0	57½	50 55	April 1868
3457	North Downs, c, Redruth	5 8 10	—		Jan. 1868
695	North Roskear, c, Camborne	60 9 0	12	11 12	Sept. 1868
5936	North Treskerby, c, St. Agnes	1 9 0	½	6s. 8s.	Dec. 1860
3000	North Wheal Chiverton, l, Perranzabuloe	4 10 0	—		Nov. 1868
1024	Rose and Chiverton United, l, Newlyn	6 0 0	—		Aug. 1868
6138	South Condurrow, t, c, Camborne	4 8 6	¾	1 1⅛	Oct. 1868
940	St. Ives Consols, t, St. Ives‡	10 15 0	8	7 8	Nov. 1867
920	Stray Park, c, t, Camborne†‡	45 5 8	5	6 7	April 1868
548	Trelyon Consols, t, St. Ives	16 0 0	—	4 4¼	Dec. 1866
6000	West Basset, c, Illogan†‡	2 0 0	—	1 1½	May 1868
1024	West Caradon, c, St. Cleer‡‡	25 0 0	3	2 3	Nov. 1868
12800	West Drake Walls, c, Calstock	0 6 0	9s.	7s. 8s.	Nov. 1868
2582	West Great Work, t, Breage	5 11 0	2½		June 1866
6000	West St. Ives, t, c, St. Ives	0 3 6	9s.		Oct. 1868
512	West Wheal Frances, t, Illogan	106 15 0	36	34 36	
5000	West Wheal Kitty, t, St. Agnes	3 4 0	—		Nov. 1868
6000	Wheal Agar, c, Illogan	7 13 0	1⅛		Oct. 1868
512	Wheal Buller, c, Redruth†‡	28 5 0	6	7 8	Nov. 1868
811	Wheal Emily Henrietta, c, Illogan	20 0 0	27	20 23	Jan. 1868
5724	Wheal Grenville, c, Camborne†	10 8 0	—	1⅜ 1⅝	Sept. 1868
1040	Wheal Trelawny, s-l, Liskeard†	8 17 0	8	7 8	Sept. 1868
5000	Wheal Uny, t, c, Redruth	10 14 6	3½	3 3¼	Oct. 1867

b, blende; cl coal; c, copper; g, gold; l, lead; s, silver; sl, slate; s l, silver-lead; t, tin; z, zinc.

\ₓ Companies marked thus * have been incorporated with Limited Liability; those marked † have been admitted on the Stock Exchange, those marked thus ‡ have paid Dividends.

NON-DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.
4000	Ballacorkish, I. of Man, l, c*	4 0 0	—	
4000	Bedford Consols, c, Tavistock	3 0 6	½	
4000	Bedford United, c, Tavist.*	2 13 8	2¼	
1248	Boscaswell, t, c, St. Just	7 6 0	—	
5000	Bottle Hill, t, Plympton	1 14 6	—	
5000	Bryn Gwiog, l, Flint	0 18 0	—	
1200	Bryn Gwyn, l, Mold*‡	9 0 0	—	
7500	Brynystwith, l*	0 10 0	—	
1000	Budnick Consols, c	2 5 0	—	1⅛
6000	Bwadrain Cons., s-l, Cardig.	3 2 0	—	
30000	Caldbeck Fells, l, Cumberld.*	1 15 0	½	11s. 13s.
1000	Camborne Consols, c	11 10 0	—	
11000	Cape Cornwall, t, c* [8000 £2 10s. pd., 3000 25s. pd.]			
5000	Capel Banhaglog, l, Mont.	1 10 0	—	
914	Caradon Consols, c, St. Cleer	32 13 6	6	
1000	Cardynham China-clay*	3 0 0	—	
6000	Carn Camborne, c, Cambrn.	2 9 0	½	⅜ ½
2000	Carnmarth Granite Co.*	—	—	
20000	Carysfort [3200 £2½ pd., 16800 £1 ½ pd.]			
2500	Central Minera, l, Wrexham*	3 1 6	—	
16000	Central Snailbeach l*	1 0 0	—	
3000	Chiverton Valley, l, Perranz.	2 0 0	3¾	
2048	Colquite & Callington Un., c.	1 3 0	—	
256	Condurrow, c, t, Camborne‡	76 10 0	—	
50000	Connorree, c, sul, Wicklow*	1 0 0	4s.	
983	Copper Hill, c, Redruth‡	12 10 0	—	
1000	Cornwall Hematite Co.*	5 0 0	7	
1055	Craddock Moor, c, St. Cleer‡	13 15 0	—	
12000	Crelake, c, Tavistock	3 12 0	—	
6000	Cuddra, t, St. Austell	5 10 0	—	
740	Eaglebrook, l, Talybont*	19 15 0	—	
1000	East Basset and Grylls, t	3 5 0	—	
6000	East Bottle Hill, t	0 12 0	—	
4000	East Chiverton, l, Perranz.	3 4 9	1½	1¼
4000	E. Gunnislake & S. Bed. c.	10 19 0	—	
6000	East Laxey, l, Isle of Man	3 0 0	—	
5000	E. Rosewarne, c, t, Gwinear	2 19 0	—	
6000	East Snaefell, l, I. of Man*	3 0 0	—	
5610	East Seton, c, Camborne	0 16 6	—	1 1¼
1190	E. Wh. Agar, c, St. Cleer	12 17 0	—	
6000	East Wheal Reeth, Lelant	—	—	1 1¼
5000	E. Wh. Rose Con., l, Per.*	2 10 0	—	
6000	Ebury Lead Min. Co., Flint*	1 15 0	—	
6000	Fortescue Cons., c, Tavistock	0 12 6	—	
940	Fowey Con., c, Tywardreath‡	5 4 6	—	
1026	Garden, c, Morvah	6 15 3	—	
6000	Gen. Min. Co. for Ireland, c.	5 10 0	—	
10000	Glan Alun, l, Mold*	0 12 0	⅝	12s. 13s.
40000	Glasgow Caradon c* [30000 £1 pd., 10000 15s. pd.]			
5700	Goginan, Cardigan, l	12 10 0	—	
6000	Gothic, s-l, Cardigan*	2 10 0	—	
486	Grambler & St. Aubyn, c†‡	74 0 0	—	
10000	Great Cwmsymlog, s-l*	1 15 0	—	
4096	Great Caradon, c, St. Ive	4 3 0	—	⅛
5000	Great Mona, l, Isle of Man*	4 0 0	—	
12500	Gt. No. Laxey (Isle of Man)*	1 0 0	—	½ ¾
6000	Great N. Tolgus, c, Illogan	1 0 0	—	
15000	Great Rhosesmor, l	5 0 0	—	
6000	Gt. S. Chiverton, s-l, Perranz	1 18 6	1½	1 1¼
3313	Gt. Wh. Baddern, t, Devoran	7 17 6	—	
119	Great Work, t, Germoe	100 0 0	—	
10240	Gunnislake (Clitters'), t, c.	4 19 0	—	
6068	Gwydyr Park, l, Llanrwst	1 11 0	—	
6400	Harwood, l, Durham*	0 7 6	—	
1019	Leeds and St. Aubyn, t, c	19 13 4	—	
5120	Lovell Consols, Wendron, t.	0 6 0	—	
6000	Maudlin, c, Lostwithiel	4 7 0	—	
6000	Mid-Wales, s-l,*	2 10 0	—	
4662	Minera U., l* [2500 £4 p., 2162 £2 p.]		—	
1000	Montgomeryshire, l, b*	3 0 0	—	
640	Mount Pleasant, l, Mold	4 0 0	—	
1024	Nangiles, t, c, Kea	32 10 0	—	10
12800	Nether Hearth* [6400 £1 pd., 6400 2s. pd.]			
6000	New Birch Tor & Vitifer, t‡	1 13 6	—	
1500	New Chiverton, l, Perranz.	0 17 0	—	
6000	New Clifford, c., Gwennap*	2 15 0	—	
24000	New Cornish [12000 £1 pd., 12000 15s. pd.]			
6400	N. Crow Hill, l, St. Stephen.	3 6 6	—	
6514	New E. Russell, c, Tavistock	0 12 6	—	
20000	New Gt. Cons., c, Tavistock*	0 17 6	—	
3000	New Huntingdon, t, Devon	0 1 0	—	
6400	New Pembroke, St. Blaz. t, c	1 12 0	—	
3680	New Treleigh, c, Redruth	—	—	
667	New Trevenen, t, Wendron	12 1 6	—	
6000	New Westminster, l	5 10 0	—	
4096	New Wh. Lovell, t, Wendron	1 19 6	1⅛	1 1⅛
2000	N. Wh. Towan, c, t, Wendron	1 10 0	—	
5000	No. Dolcoath, c, Camborne	4 3 0	—	
1361	No. Grambler, c, Redruth	9 3 9	—	
6000	North Jane, t, s-l, Kenwyn	3 4 6	—	¼
2000	North Levant, t, c, St. Just	10 12 0	11	10 11
4000	No. Phœnix, c, Linkinhorne	4 11 0	—	
3240	North Pool, c, Illogan	6 3 6	—	
1024	No. Retallack, c, Perrazabuloe	2 0 0	—	
1935	No. Shepherds, l, Newlyn*	6 10 0	—	
6000	North Wheal Basset, c, t†	5 0 0	—	
5610	N. Wh. Crofty, c, Illogan†	3 11 3	1⅝	1½ 1¾
6144	N.W. Robert, c, Smp. Spiney	4 8 11	—	
12288	Okel Tor, c, Calstock	2 7 4	—	
8000	Old Gunnislake, c, Calstock	3 9 6	—	
6400	Par Consols, c, St. Blazey†‡	2 14 6	—	
8465	Pedn-an-drea, t, Redruth	7 3 6	—	
5000	Pendeen Consols, c, St. Just	7 5 0	—	
4000	Penhale United, s-l, Perran.*	2 15 0	—	
2177	Penhale Wh. Vor, t, c, Breage	6 2 6	—	
5000	Penhalls, t, St. Agnes	3 0 0	3¾	3¾ 4
3000	Perran, s-l, Perranzabuloe	0 10 0	—	
1772	Polberro, t, St. Agnes	15 0 0	—	
6000	Prosper U., t, c, St. Hilary	9 4 0	—	
4620	Redmoor, c, t, Callington	1 19 6	5s.	3s. 5s.
6000	Reinnie Laxey, l, I. of Man*	4 10 0	—	
3000	Rhydtalog, s-l, Cardigan	0 5 0	—	
6000	Roaring Water, c*	2 15 0	—	
2000	Rosecliff and Tolcarne, l*	9 15 0	—	
5915	Rosewall Hill & Ransom, c.	3 5 0	—	
10000	Royalton, t, St. Columb	1 1 0	1⅝	1⅜ 1⅝
20500	Snaefell, l, Isle of Man*	1 0 0	—	
12000	Sortridge Cons., c, Tavistk.†	2 5 6	—	
512	South Basset, c, Gwennap	30 10 0	—	
3000	So. Chiverton, s, l, Perranz.	6 2 6	—	
6000	S. Dolcoath & Carnarth. Con.	2 16 6	—	
3000	So. Fowey, c, Tywardreath	0 15 0	—	
5000	So. Gt. Work, t, c, St. Hilary	0 3 6	—	¼ ⅜
3395	So. Herodsfoot, l, Liskeard	4 10 0	—	
30210	South of Scotland, c*t	1 0 0	—	
2739	South Trevenna, c,	2 10 0	—	
6000	South Wheal Grenville, t, c.	1 5 6	—	
400	So. Wh. Seton, c, Camborne	83 13 0	—	
236	Spearne Consols, t, St. Just	4 4 4	—	
242	Spearne Moor, t, St. Just	6 2 0	—	
673	St. Ives Wh. Allen, t, St. Ives	18 18 7	—	
8771	St. Just Amalg., t,* [6000 £3 10s. pd., 2771 £2 5s. pd.			
300	Steeple Aston Iron Ore Co.	7 0 0	—	
7000	Stiperstones, l, Salop*	5 10 0	—	
6000	Tamar Valley, s-l, Beeralston	0 14 0	—	
3500	Tin Hill, t, St. Austell	1 12 0	—	
501	Tresavean and Trethurrup	16 11 0	—	
4096	Trewetha, s-l, Menheniot	10 19 6	—	
1943	Treworlis, t, Wendron	11 15 4	—	
4200	Vigra and Clogau, c, Dolg.*‡	5 10 0	—	
2500	West Briton, Crowan	1 2 6	—	
256	West Damsel, c, Gwennap	38 10 0	—	
1000	West Devon Cons., c, Tavistck.	—	—	
12000	W. Maria & Fortes., c, Lam.	3 13 0	—	
12800	West Prince of Wales, c.	0 11 0	—	8s. 10s.
1000	West Rose Down, c, Linking.	22 0 0	—	
512	West Tolgus, c, Redruth	62 0 0	36	
4096	W. Wh. Tremayne, St. Erth	0 12 0	—	
741	Wheal Basset and Grylls, t.	7 18 6	—	
6000	Wheal Crebor, c, Tavistock	2 9 0	½	8s. 10s.
4000	Wh. Emma, c, Buckfastleigh	3 19 0	—	
6000	Wheal Ida, s-l, St. Ive	1 6 6	—	
1024	Wh. Kitty, t, Uny Lelant†	3 10 6	6	5½ 6
896	Wh. Margaret, t, Uny Le.‡	13 17 6	6	4½ 5
728	Wheal Margery, St. Ives, t, c	27 4 0	—	
6000	Wheal Mary Florence, c*	2 6 0	—	
1000	Wh. Mary Hutchins, c, Plymp.	2 0 6	—	
2000	Wheal Rose, c, Scorrier	0 10 0	—	
1920	Wh. Trannack, c, Sithney	1 13 3	—	
1200	Wheal Trevenna, t, c*	10 0 0	—	

MISCELLANEOUS.

Shares.	Name	Paid.	Last Pr.	Bus. done.
60000	Anglo-American Telegrh.*†	10 0 0	22	22 22¼
10000	Arklow Chemical Works, l.	1 0 0	—	
Stock	Atlantic Telegraph	100 0 0	32	31½ 31¾
Stock	Ditto, 8 per cent.	100 0 0	76¼	
80000	Ebbw Vale Iron Co.*†	27 10 0	15¼	
2500	Laxey Neath Smelting Co.*	3 10 0	—	
148525	London Gen. Omnibus*†	4 0 0	2⅛	2

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